# A BOOK OF NIMBLE BEASTS

DOUGLAS ENGLISH

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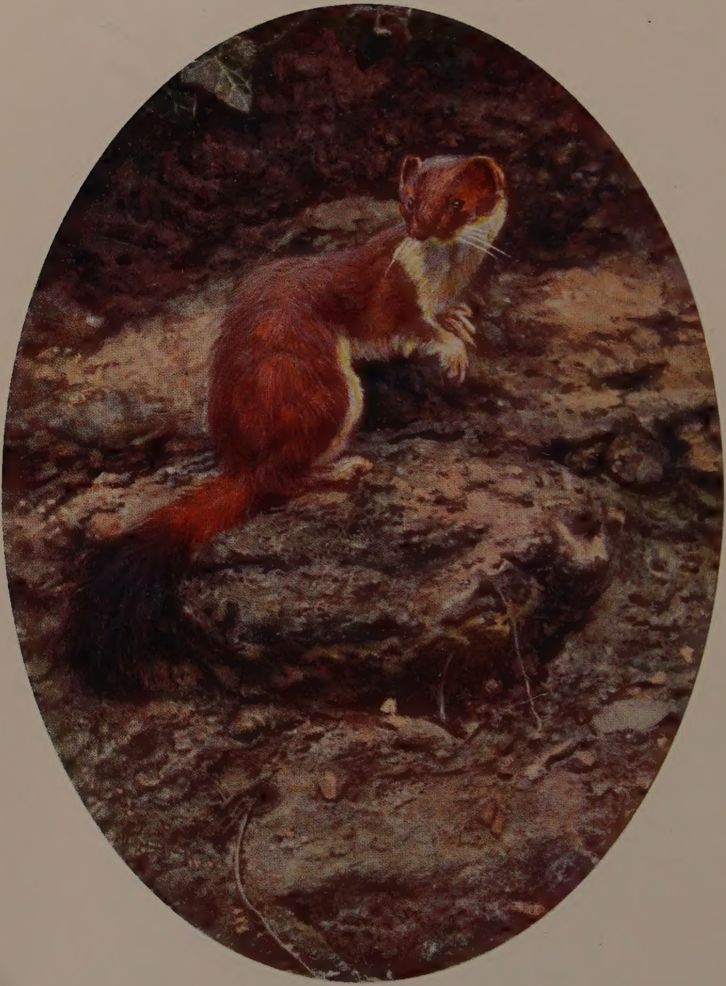

He held himself with an air, his body arched, one broad white pad uplifted, his tail curved decorously.—IN WEASEL WOOD.

# A BOOK OF NIMBLE BEASTS

## BUNNY RABBIT, SQUIRREL, TOAD, AND "THOSE SORT OF PEOPLE"

BY

DOUGLAS ENGLISH

FELLOW AND MEDALLIST OF THE ROYAL
PHOTOGRAPHIC SOCIETY

WITH OVER 200 ILLUSTRATIONS
FROM PHOTOGRAPHS OF LIVING
ANIMALS TAKEN BY THE AUTHOR

BOSTON
DANA ESTES AND CO.
1911

*Printed in Great Britain*

IN MEMORY
C. J. E.

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# PUBLISHER'S NOTE

THE publisher may, perhaps, be allowed to call the reader's attention to the illustrations—particularly to the two of the Sand-Wasps, reproduced in colour. The difficulties of photographing from wild life active creatures of such small dimensions as hymenopterous insects are very great from an optical standpoint. The picture of Spinipes bringing the beetle grub to her tube took several years to accomplish successfully, and the strain involved by the conditions, a blazing June sun on the operator's back, an uncertain foothold, and the necessity of keeping the attention riveted for hours on one particular patch of sunlit sand, was exceptional. It is of course possible, probable even, that with the introduction of an improved lens system, which will enable fast exposures to be made at very short range on minute moving objects, this particular picture may be repeated and improved upon. But the odds against the second picture on the same page, that of Spinipes stinging the jewel-fly, *ever* being repeated, are enormous. It will be necessary in order to secure the repetition of such a picture, first, that the camera shall be focussed on one out of a score of tubes; second, that the parasitic jewel-fly shall enter that particular tube; third, that the Owner Wasp shall return while the jewel-fly is below; fourth, that the Owner Wasp shall pull the jewel-fly to the surface; fifth, that the jewel-fly shall cling to the rim of the tube; sixth, that the Wasp shall sting it in this position—it will be noticed that the sting is directed at the junction of the thorax and abdomen; seventh, that the observer shall be ready to expose his plate at the exact psychological moment; and eighth, that he shall succeed in doing so. The first six conditions were, in Mr. English's case, fulfilled by chance. As regards the seventh he was unready. He was, in fact, some feet below his camera. But chance befriended him still further.

He caught the jewel-fly's glint, and caught the shadow of the returning Wasp. He flung his arm up, grabbed the dangling bulb, and pressed at random. The pressure dragged the camera from its moorings—to fix a camera on a Sand Cliff's side is no slight task—and it fell twelve feet down. Yet it had done its work and made the picture.

There are a score of pictures in this book, which are believed to be unique, not only by reason of the rarity of their subjects, but also by reason of the fact that they are the *only* pictures of such subjects, good or bad, in existence. The most remarkable among them is the picture of Spinipes stinging the jewel-fly.

# INTRODUCTION

I KNOW a Boy Scout who has never seen a weasel. Many weasels, I fancy, must have seen that Boy Scout.

And I know a Girl who has never seen a Harvest Mouse, but who might have, often.

There may be other boys and girls like these. There may be grown-ups also.

It is for them that I have written this book. It is to them that I offer its pictures.

I would lead them (with hushed voices and quiet feet) into God's Under-World; a World of queer small happenings; of sparkling eyes and vanishing tails; a whispering, rustling World.

I would have them, whatever their age be, approach this World as children. For children's eyes are closest to the ground.

DOUGLAS ENGLISH

HAWLEY, DARTFORD, 1910

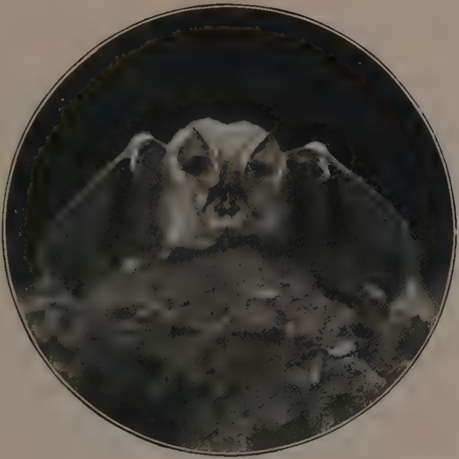
# SOMETHING ABOUT BATS

## (JANUARY)

NATTERER'S BAT
The best-looking Bat in Britain

YOU must all, I think, have seen Bats flying, or, at any rate, pictures of Bats flying, and you must all know that they are night, or twilight, beasties, though some of our English kinds fly about in broad daylight more often than most people think. But do you all know that they are the only four-footed creatures that *really* fly—for they are four-footed though they don't look it; and do you all know that there are, probably, more different kinds of Bats in England than there are different kinds of any other beastie; and that they are the very ugliest of British Beasties, taking them altogether; and that they all have very small eyes—which is a queer thing for twilight beasties to have; owls, of course, and dormice have very big eyes—and that they have either very wonderful ears, or very wonderful noses, but not both together? If you don't know all this, perhaps you would like to hear more.

We had better, I think, begin with a Bat's wings, for, when we have learnt something about these, we may perhaps get some notion as to why a Bat is more clever in the air than a bird, and far, far more clever than a flying machine, worked by a human brain, is at present. The reason why a Bat is a cleverer, I don't mean a stronger, flier than a bird, is a reason which you young people will find to be a very common one, if ever you try your hand at guessing Mother Nature's riddles. It is simply this—that *he has to be*. A Bat has to catch his food, tiny food mostly, in the air, and he has to catch it in a bad light, and, as far as we can tell, though we cannot be sure of this, his eyesight is not as good as,



THE LESSER HORSESHOE BAT

You can see his nose-leaf, shaped like a horseshoe, very well in this picture. Both the Greater and Lesser Horseshoe Bats are wonderfully neat fliers

say, a swallow's eyesight. This means that he has had to pick up a wonderful quickness in checking his own flight, and in turning sharp in the air, almost head over heels sometimes, and in diving, and in soaring up again. To do all these things well he has had to be built in a very special way, and I will try to explain to you how he has been built by comparing a Bat with one of ourselves, for you must remember that a Bat belongs to the same great order of living creatures as we do, and that a Bat is much more like a human being than a bird is.

Let us fancy, then, a small boy being turned into a Bat. The first thing that would have to happen would be that his legs would have to be bent at the knees, and shrunk until they were as thin as sticks. Then they would have to be twisted right and left until the knee-caps faced the wrong way about. His arms would have to be shrunk too, and his fore-arms would have to be stretched until they were twice their natural length, and his middle-fingers would have to be about a yard long, and his other fingers nearly a yard long also. His thumb might be left as it was, but it would have to have a strong claw at the end of it. In between his fingers, and joining his arms to his body, and stretch-

THE NOCTULE
You can see one earlet quite plainly, and his eye "starting out of his head"

ing down to his legs, and joining his legs together, there would have to be a web of skin, and then, perhaps, if his chest was brought well forward like a pigeon's, and his head pressed well back until it stopped between his shoulders, he might, if his muscles were strong enough, and the whole of him was light enough, be able to fly.

Now about a Bat's eyes. I have already told you that these are very small—at least they

The Noctule
One of our largest Bats. He is sometimes more than a foot across the wings, and his brown fur is as velvety as a Mole's—when he feels quite well

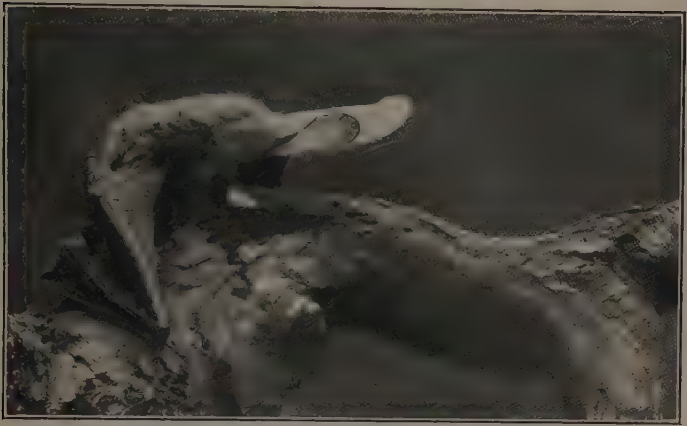
Lesser Horseshoe Bat
He is hanging head downwards, and beginning to wrap himself up in his wings before going to sleep

look very small in our English Bats—and that it does not seem likely that Bats possess the wonderful eyesight, which one would expect them to have. In some cases the eyes are so curiously placed in the head that the Bat can hardly be able to see straight in front of him at all. In the Leaf-nosed Bats, for instance, you can only just see the Bat's eyes when you look at him full face, because his leaf-nose all but hides them—you can see what I mean from the pictures—and in the case of one rare little bat, the Barbastelle, the eyes are set so far back that part of the ear comes round them like a horse's blinkers; and one can hardly imagine his being able to

THE GREATER HORSESHOE—A PIG THAT *DOES* FLY see much sideways, even if he can see quite well in front. There is just one little thing, however, which I have noticed in a large Bat called the Noctule, and this may mean that Bats have better eyesight than one would at first suppose. The Noctule can make his own eyes "start out of his head," until they seem to be almost twice as large as usual. If all Bats can do this it is quite likely that very few people have seen their eyes properly at all; that

THE GREATER HORSESHOF BAT
Hanging head downwards. Except when he is flying he always carries his tail cocked up over his back, as you see it.

is, have seen them as they really appear, when the Bats are chasing moths in the twilight.



THE LONG-EARED BAT

His ears are more than twice as long as his head, and beautifully pink and transparent when seen in the right light

I think I will leave the pictures to show you the ugliness of Bats generally, though I have purposely put one picture in to show you that all Bats are not ugly—for I am sure you will agree with me that the little white-fronted Natterer's Bat, has quite a pretty face. I must tell you a little more, though, about Bats' ears and noses.

When we were turning, in imagination,

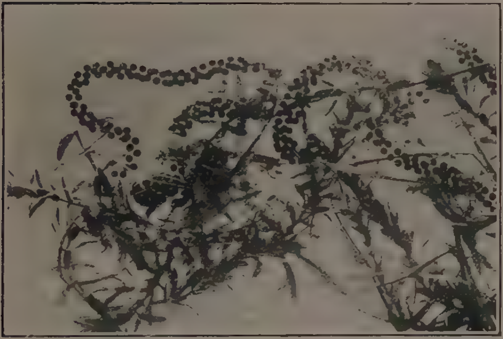
our small boy into a Bat, we did not trouble ourselves about his ears and nose, but we ought to have done so, for there are some very wonderful differences between Bats' ears and noses, and the ears and noses of human beings. If you will look at anybody's ear carefully you will see that in front of, and just a little below the ear-hole, there is a small lump of flesh which points backwards across the opening. It is not much to look at in a human being, and does not seem to serve any particular purpose, but in many Bats it is evidently very important, for it is quite large and takes all sorts of curious shapes. It is called the "earlet." Sometimes it is pointed, sometimes square, and sometimes rounded. Sometimes it is long and thin and tapering like a dagger, and sometimes it is short and thick and blunted like a kidney-bean. You will see several of its different shapes in the pictures, and you will also see that the leaf-nosed Bats, who have such queer ornaments on their noses, do not have it all. Now some wise folk think that the ornament on the face of a leaf-nosed Bat, which makes him appear so very ugly to our ideas (though I have no doubt his wife thinks it very beautiful) may give him a kind of sixth sense which is neither seeing, nor smelling, nor hearing, nor feeling, nor tasting: a sense, that is, like that which blind people often seem to possess and which helps them, poor souls, through their world of darkness. If this is so (but you must remember that we can only guess about it), it

THE PIPISTRILLE
A small Bat and one of the commonest

may be that the earlets of Bats do much the same, and that, therefore, Bats with earlets have no need of leaf-noses, and Bats with leaf-noses have no need of earlets.

# SOMETHING ABOUT TADPOLES

(FEBRUARY)



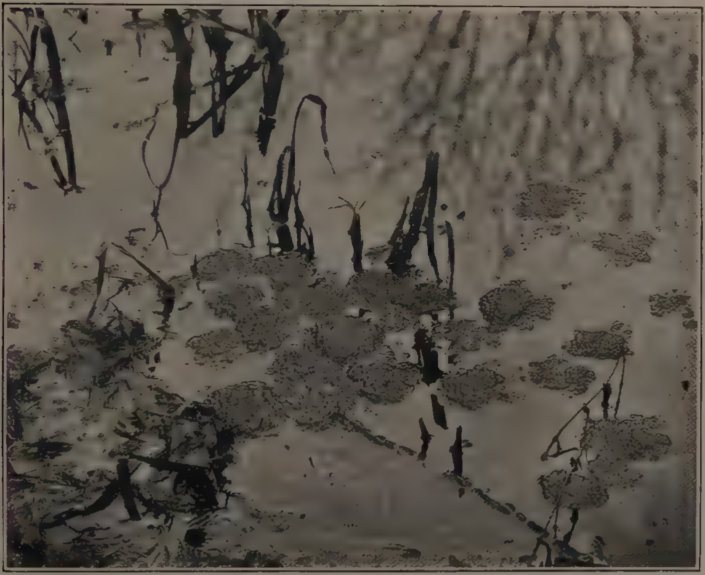
THIS IS TOAD'S SPAWN, WHICH IS LAID IN "ROPES"

HOW many of you can tell me the difference between a frog-tadpole and a toad-tadpole? I don't mean when they are so small that it seems a kindness to call them tadpoles at all, but when they are quite a good size, with great fat heads and shiny little eyes and squiggly little tails. And how many of you can tell me the number of different kinds of tadpoles which one can find in England in the springtime? Most of you, I am sure, know a tadpole when you see one (sometimes he is called "pot-ladle," or "pollywog," or "horse-nail,") and some of you may know that a fat frog-tadpole is brown with little specks of gold, while a fat toad-tadpole is black all over; but I don't expect many of you know that there are two kinds of frog-tadpole, and two kinds of toad-tadpole, and three kinds of newt-tadpole, to be met with in England, which makes seven kinds of tadpoles in all.

Now as these seven little tadpoles are all different from one another (though the two frog-tadpoles and the two toad-tadpoles are not *very* different), we may be quite sure that they grow up into seven different little beasties. I am going to tell you something about the frog- and toad-tadpoles now and leave the newt-tadpoles for another time, for it will be easier for you if you don't have too much to remember at once.

If you go into the country in springtime (the middle of March is the best time where I live, but in other places it may be a little earlier or a little later) and find a pond, or a brook which runs quite slowly, or even a hole in swampy ground which has water in it, you are almost sure to see a lump of stuff which looks like dirty grey jelly, either close to the bank or on the top of some of the weeds.

If you pick up a little of this, you will find (perhaps before it has slipped out of your fingers and perhaps after) that it is full of round black eggs.



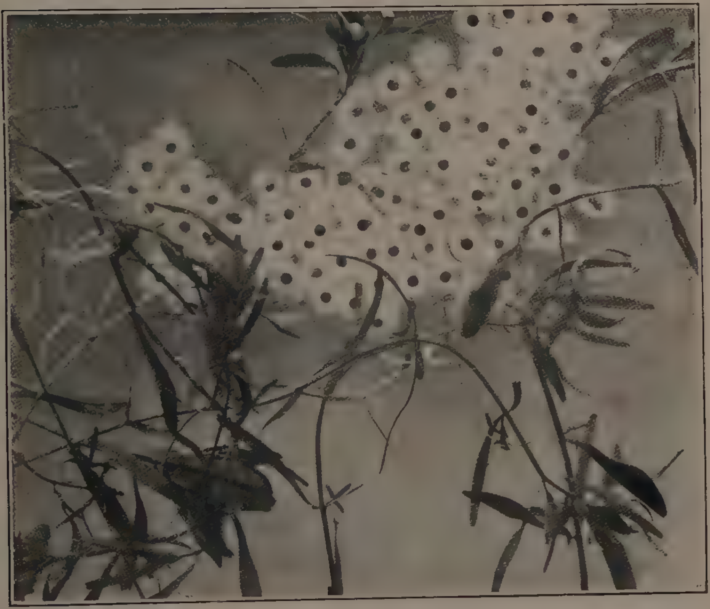
THIS IS FROG'S SPAWN FLOATING ON THE WATER

The grey jelly is either frog's spawn or toad's spawn.

If it is just a lump with no particular shape to it, it is frog's spawn, but if it is made up of small slimy ropes, which come apart from one another, and in which the eggs lie in rows like strings of black beads, it is toad's spawn. When you find toad's spawn, you may be sure that frog's spawn has been about for some time, for frog's spawn is always to be found rather earlier in the year. Whichever it may be you should take a little of it (quite a little is best) and put it in a glass jam-jar half full of water, and stand this in some bright, warm place, where it will not get knocked over, and where the sun will not shine directly on to it.

Frogs and toads usually lay their eggs in places where the sun *does* shine on them and warms them gently, and so hatches them out, but of course they do not lay them in glass bottles, and if the sun shines on these, the water will get warmer than is good for them, partly because there is no other water round to keep it cool, and partly because the bottle acts as a kind of burning-glass, and brings too much of the sunshine into itself, and so gives too much warmth to the eggs.

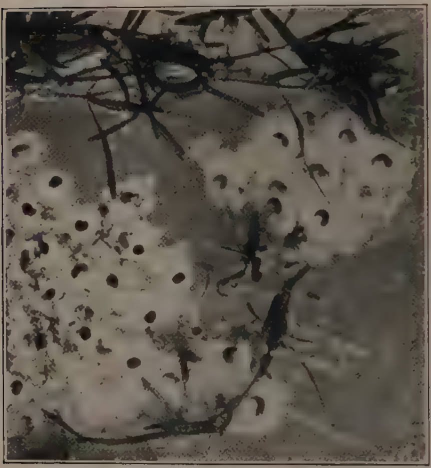
Some people think the jelly of frog's or toad's spawn acts like a burning-glass too; this, however, is a burning-glass which Mother Nature



THIS IS FROG'S SPAWN WHEN IT IS QUITE FRESH

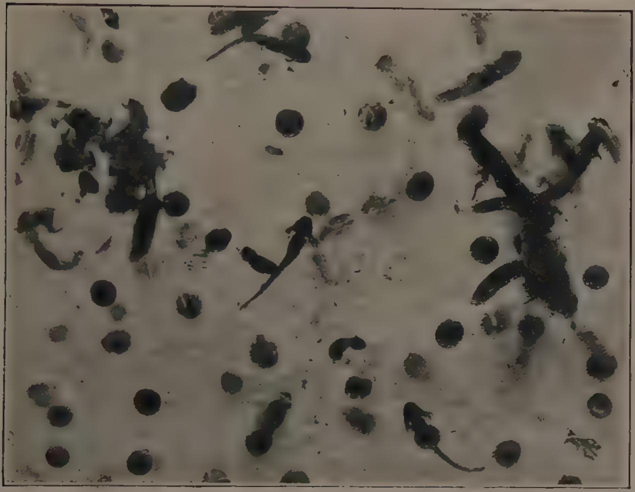
has arranged, and so there is no fear of its not acting properly.

If you find frog's or toad's spawn soon after it is laid, you will see only a small quantity of jelly round it, but this soon swells out and gets much bigger.



Frog's Spawn
The Little Curly Tails are beginning to Grow

Have you ever seen Cook make a jelly? The first thing she does is to soak the gelatine in water, so that it gets soft and swells to twice the size it was before. It swells because it takes up water inside it, and frog's spawn does just the same. Now we must try and think what the frog's spawn jelly is for. It is really the white of the eggs, the black beads being the yolk. You wouldn't understand all its uses, but one is that it makes the frog's spawn much more difficult to eat, because it is so slippery. A great many water birds are very fond of frc ld gobble it up very quickly if they had a good, big spoon, instead of a rather small bill. As it is, a great deal of

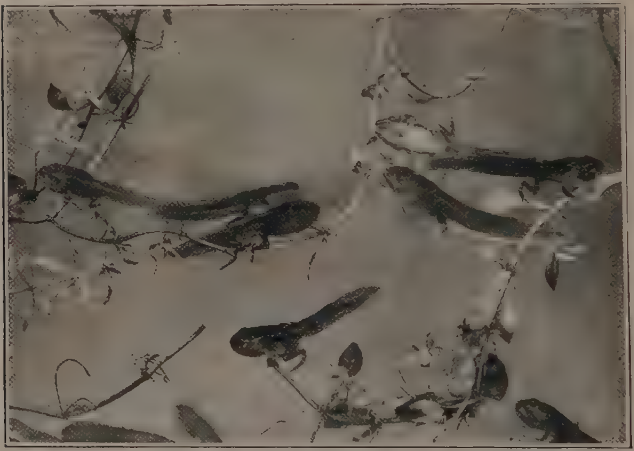


THIS IS FROG'S SPAWN, TOO

But I have photographed it with a microscope, so that you may see it a little bigger than it really is. Right in the middle is a Tadpole who has grown his feathery gills, and close to him is one like a little alderman. There is another Tadpole with gills towards the right hand bottom corner, but there is an egg behind which makes his shape wrong. All the round things are eggs and the long things are Tadpoles which have just hatched

frog's spawn and a good many tadpoles are eaten up one way or another, which is really rather lucky for us, for frogs and toads lay millions and millions of eggs, and all hatched out, there wouldn't be room in the world for all little frogs and toads.

Well, if you keep your glass bottle with the eggs in it in a good place and look at it every day, you will find something fresh to interest you every day. First the black yolks will grow larger and change their shape so that they seem longer than they are broad, and presently you will find that they are turning into tadpoles. The baby tadpole seems much too fat to begin with, and sticks out in front like a little alder-



THE TADPOLES ARE HERE SEEN GETTING VERY LIKE FROGS
Most of them have all four legs, but one has only his hind legs at present

man; but soon he gets slimmer again, and you find that he is growing a curly tail (which no alderman ever did), and that there are tiny markings where his eyes and mouth are going to be. He is still very small (about a quarter of an inch long), but before he is much bigger a very wonderful thing happens—it has been happening all the time, though you have not been able to see it—he grows a pair of gills like a fish. They are delicate, feathery things, and stand out on either side of his head, I should like to say "neck," but I do not think I ought to because frogs and toads have no necks at all, and so I suppose tadpoles have none either. All this time his tail is growing too, and presently it is long enough for him to swim with. When this happens he slips out of the jelly and wriggles about in the water. At present he has no real mouth, but he has a little opening, shaped like a horseshoe, near to where his mouth is going to be, and he uses this to hold on to weeds when he is tired, which he very soon is at first.

Once he is fairly hatched, however, his mouth grows quickly and he gets a pair of rather hard little jaws with which he can nibble the water-weed. When this happens you must, of course, put some water-weed into the bottle, though grass will do if you can't get anything else.

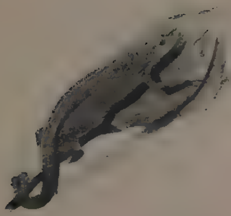
I told you that he had gills like a fish, but they are curious gills at this early stage because they have no flap of skin to protect them. If you want to see a fish's gills you must lift up the hard flap of skin which covers them. The tadpole soons grows a flap of skin, though, just like a fish, and this always appears first on the right side, so that at one stage he looks as if he had only one gill, the one on the left side. When both the flaps of skin have grown, the tadpole is really a little fish, and he stays in much the same shape, though he gets fatter and fatter, for about a month. At the end of this time he begins to grow legs, first the hind ones and then the front ones (newt-tadpoles grow the front ones first); but, in spite of his legs, he is still only a fish, because, instead of breathing the air with his lungs as a grown-up frog does, he breathes the water with his gills. During the next month, when he is getting on for three months old, another wonderful change comes over him. For a time he breathes both with his lungs (he has to put his head out of water for this) and with his gills, and so he is both a frog and a fish at once; but he gets more and more like a frog, and less and less like a fish. His lungs keep growing inside him, and his body and gills and tail get smaller and

Tadpoles Full Grown
They are covered with little specks of gold. At the bottom one can be seen feeding

smaller, and his mouth and his eyes and his legs get larger and larger, and presently he leaves the water altogether, for he is tired of water-weeds and tired of his tail (he can swim beautifully without it), and he wants to make his meals off insects and slugs, and to learn how to croak and jump, and to be a great fat frog like Mother.

# A FROG HE WOULD A-WOOING GO!

## (VALENTINE'S DAY)



"THIS is better," gasped Bombinator.

Bombinatrix eyed him anxiously.

Only his waistcoat touched the ground. His eyes and nose had vanished. The right of either foot was now the left; the left of either hand was now the right; his head, subverted, curled to touch his toes, and, in his back, was a deep hollow.

This sounds involved, and that is just what Bombinator was.

"It's awful," said Bombinatrix.

"What do I look like?" spluttered Bombinator. "It's awkward talking to your feet."

"You're like—you're like a toadstool," said

Bombinatrix, "a crinkled, gummy, yellow-spotted toadstool."

"That's the idea," said Bombinator, as he snapped back to shapeliness. "Now you try," and Bombinatrix tried.

"Passable," said Bombinator, "but not sufficient curl."

"It cricks my neck," she answered. Her head was slowly drooping.

"You *must* keep rigid," said Bombinator. "I can't see half the yellow. Throw back your head."

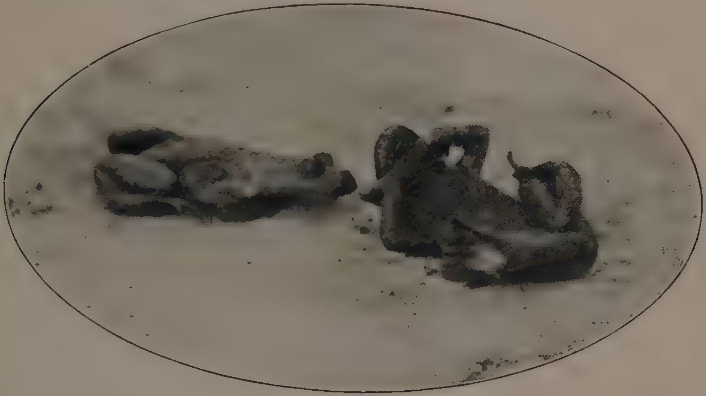
Bombinatrix threw back her head, until it grazed her toe-tips. Then she unstrung herself.

(I see you look incredulous. You ask and ask with reason: How came two fire-toads in an English garden? To this I answer frankly—I put them there myself.)

Even a fire-toad loves his liberty, though prison-life may have its compensations. The breakfast gong, for instance, two taps upon the glass. The sluggish fatted meal-worm, the feeling of full-fed security.

Nor had there been a lack of company.

The Natterjack had livened things—by running races with his own reflection. So had the mottled Green Toad, an alien like themselves; so, in his own quiet way, the Salamander.



"Passable," said Bombinator, "but not sufficient Curl"

Each welcomed freedom differently.

The Natterjack went straight into the pond (quite the wrong thing for him), and swam with short-legged jerky sweeps up to the water-lilies. There he met the Water-Rat, of whom more later. The Green Toad sought the nearest tuft of grass, and, scratching with his fore-feet at the roots, contrived a roomy burrow. He backed inside and sat there quite content, blinking his emerald eyes. The Salamander stayed where he was put—and smiled.

The fire-toads climbed upon a stone and practised squiggles—aposematic squiggles.

That resonant epithet comes, I think, from Oxford. It means, *you dare to touch me and you'll catch it*, or words to that effect. "Apo," get out, and "sema," a sign. It is quite simple, really. Yet its significance (in toads) may need explaining, and, to be master of the sense of it, you must remember that fire-toads, though dusky olive green above, are orange red beneath. A patch of orange underneath each hand, a patch of orange underneath each foot, an orange patchwork waistcoat.

Now orange is a poison-label. It means in wild-folk speech, "Be careful," and yellow means the same; and when black joins the scheme, it means, "Be very careful, here is poison."

Sometimes the colour flaunts itself—witness the salamander, or the wasp. Sometimes it is concealed, witness the fire-toad. But fire-toads have the knack of showing it. Drop one upon his back and there he stays, knowing the underpart of him is fearsome. Startle one as he sits at ease, and he will flick into a knot, crinkly, immovable, unreal, with screaming labels at each corner. To be adept at this, the fire-toad needs spare living, one meal, at most two meals a day. When corpulent he finds the bend beyond him.

But corpulence is transient in toads. The first to find a waist was Bombinator, and Bombinatrix quickly followed. They now could travel with less apprehension. They made five equal hops and stopped. Before them stretched the pond, green-carpeted, a mirror-patch of water here and there, balsam and iris on the fringe of it, and fronting them, upon his leaf, the Rat.

The Natterjack had left him, and was swimming landwards. His head bobbed with each stroke, and he was slow in coming.

"The surliest brute I ever met," he said.

"The Rat?" said Bombinator.

"The Rat," replied the Natterjack. "He grumbled at my ripples in the water—and *he* makes noise enough. Just listen to him."

The Water-Rat had left his leaf, and now was in the reed-stems. He held a two-inch cutting in his paws. They heard his munching plainly.

"This is a queer pond," said the Natterjack;

“it’s full of noises. A shrew-mouse chirped as I swam back, and half a dozen bubbles struck me. That means there’s something grunting. My yellow stripe! what’s that?”

It rose *crescendo*,

“*brek-ek-ek-ek-ek-ek-ek-ek-EX!*”

and finished *amoroso*,

“*KO-ax!* ”
*KO-ax!*
*KO-ax!*”

“I know it,” shrieked Bombinator. His little eyes were starting from their sockets, as he sat up entranced.

“I know it,” echoed Bombinatrix.

“Then you might share your knowledge,” snapped the Natterjack. Jealousy had convulsed him, for he too can sing.

“A French Frog,” cried Bombinator.

“A French Frog,” echoed Bombinatrix, and in a rattle came the southern notes:

“*brek-ek-ek-ek-ek-ek-ek-ek-EX!*”

“*KO-ax!* ”
*KO-ax!*
*KO-ax!*”

"I'll find him, if I hop all night," said Bombinator.

He plunged aside into the grass, and Bombinatrix followed at his heels.

The Natterjack soon caught them. He ran with little mouse-steps.

"Are you quite prudent?" he jerked out.

"Prudent?" said Bombinator, "why, he's a countryman."

So all three went together, and dropped abreast into the Green Toad's burrow.

His Little Eyes were Starting from their Sockets as he sat up entranced

"Have you heard him?" said Bombinator.

The Green Toad was half dozing.

"Heard what?" he muttered sleepily.

"The French Frog," said Bombinator. "Come out and listen."

They pulled him out between them.

THE WATER-RAT HAD LEFT HIS LEAF AND NOW WAS IN THE REED-STEMS. HE HELD A TWO-INCH CUTTING IN HIS PAWS. THEY HEARD HIS MUNCHING PLAINLY

The Green Toad slowly stretched himself.

“*That?*” said he, “that's not French.” Then he relapsed to sleep again.

“What did I tell you?” said the Natterjack.

“You told us nothing,” said Bombinator. “Let's ask the Salamander.”

The Salamander had not moved an inch.

“Is that song French?” the Natterjack inquired.

The Salamander slowly raised his head, curled S-wise out and home again, blinked either eye three times, smiled fatuously at each toad in turn, and then smiled at the sky.

“Oh, come on!” said the Natterjack. The Natterjack is all on wires, and Salamanders madden him.

“*brek-ek-ek-ek-ek-ek-ek-ek-EX!*”

“*KO-ax!*

*KO-ax!*

*KO-ax!*”

The Natterjack now led them, faster and faster as the song grew louder, hippy-hoppy, hurry-scurry, bumping against the snails and spiders, starting the flies and beetles, and rousing every sleeper in the grass.

Small wonder that they soon encountered trouble.

They wakened the King Toad.

Since you last knew him, the King Toad has grown. His waist is fourteen inches. His mouth could welcome three small toads abreast.

The fire-toads crouched in front of him (the mouth seemed very wide); even the Natterjack hung back, and waited to be spoken to.

Ten minutes passed, and then the King Toad spoke, in slow, imperial-measured tones.

"Who are you?" said he, and fixed his royal eye on Bombinator.

Bombinator's mouth was flattened to the ground, and his reply was indistinct.

"Speak louder," said the King Toad.

But Bombinator kept his head. If he spoke louder he must move, and, if he moved, he might be swallowed.

Once more he muttered with closed lips.

The King Toad slowly raised one foot. Before it reached the ground again the Natterjack had vanished. So had the fire-toads, but in different fashion. Where they had been were now two spotted toadstools.

"That's a queer trick," said the King meditatively. "Orange underneath I see. Risky

THE SALAMANDER HAD NOT MOVED AN INCH

to eat without inquiries. Come back, Natterjack."

Two yellow eyes were peeping round a dock-leaf. The Natterjack slouched low in the Presence.

"Have you seen this trick before?" said the King Toad coldly.

"I have, Sire," said the Natterjack.

"Do it yourself," said the King Toad.

"Alas, Sire," said the Natterjack, "I am too stout."

"Not a bad fault," said the King more graciously, "not a bad fault. What is the meaning of it?"

"It means, Sire, that my two small friends are frightened."

"Frightened?" said the King Toad; "frightened of what?"

"Of you, Sire."

The Natterjack Slouched low into the Presence

"Of me?" said the King Toad. "Why should a toad fear me? I am the Protector of all toads." He swelled himself imperially.

"HAVE YOU SEEN THIS TRICK BEFORE?" SAID THE KING TOAD

"These are strange toads, Sire," said the Natterjack, "they come from France."

"France?" said the King; "this must be looked to. The place is being overrun with aliens. Undo them, Natterjack."

The Natterjack looked pained.

"Sire," he gasped out, "they're poisonous. I bit one once, and could not sing for days."

"Could not sing for days?" said the King. "Could not sing for days?" The shadow of a smile played round his mouth.

"Just fetch me that French Frog," he said.

"Sire," said the Natterjack, "it was during our unsuccessful search for him that we had the felicity of being so graciously received by your Majesty."

"You know him then," said the King, frowning.

"The fire-toads know his song, Sire. At least they said he was a countryman."

"They shall be made better acquainted," said the King, "much better acquainted. You will find the French Frog by the water's edge, beneath the furze-bush. You may go."

The Natterjack went scudding like a mouse.

He started in the wrong direction, but chance befriended him. Climbing upon a clump of moss, he opened out the circuit of the pond. The furze-bush stood on the far side of it. Its lower branches jutted from the bank, and, arching downwards, trailed into the water. From the first dip of them spread dancing waves.

The French Frog still was singing, and each note, caught and re-echoed overhead, crept down the boughs and rippled to the shore.

So far so good. His goal was plainly visible. But how to get there? He made a bee-line for the water's edge, and tumbled down the bank.

His first idea, to swim, was soon abandoned.

With no clear mark by which to set his course he might swim on till nightfall. But if he crept along close to the water? This seemed a certainty, so off he started.

It was uneven going. Sometimes a stretch of sticky mud, sometimes the mazy reed-stems, and sometimes, where the bank was hollowed out, deep water.

The Natterjack was nimble on his feet, and scuttling, crawling, swimming, made good progress. Before he paused, the furze-bush rose above him. Once in the shade of this, he moved discreetly. He slid from stone to stone, and at each stone he rose to reconnoitre. At the fifth stone, a bulky slanting one, he sighted the French Frog. The French Frog sat absorbed in his own harmonies, his mouthpiece taut, to right and left of it two filmy bubble spheres, now swelling now collapsing.

*"brek-ek-ek-ek-ek-ek-ek-ek-EX!"*

*"KO-ax!*
*KO-ax!*
*KO-ax!"*

It sounded like a challenge.

The last notes struck the listener squarely. He too could sing. Had he not sung against the wood-pecker, yaffle for yaffle, note for note? He swelled himself to bursting point, shut both his eyes, strained to their uttermost the voice-chords underneath his tongue, and loosed one mighty "Yaup!" It cut the last "*Ko-ax*" in half, and as its rattle spent itself, he looked to see what came of it. He looked in vain. The French Frog was not there.

The Natterjack at first was jubilant (a signal victory this) but quiet reflection sobered him.

His mission was to bring the French Frog with him. Now there was no French frog to bring. He searched five yards each way, then gloomily retraced his steps.

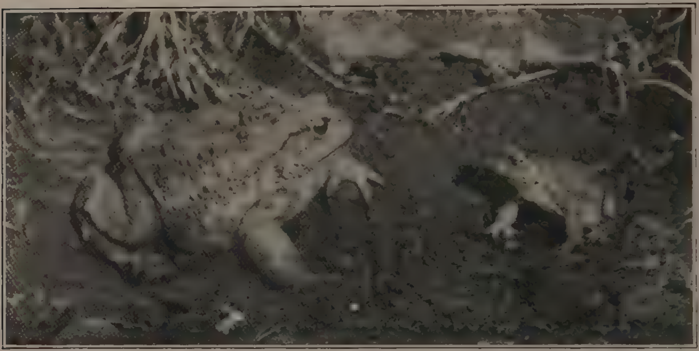
The French Frog Sat Absorbed in his own Harmonies, his Mouthpiece taut, to Right and Left of it, two Filmy Bubble Spheres, now Swelling, now Collapsing

He found the King Toad sleeping, and pausing at a prudent range, croaked nervously.

The King Toad made no sign.

He croaked again, and louder.

The King Toad moved uneasily. His eyebrows twitched, and one eye half revealed itself. Upper and under lids stayed fast, but, in their crescent interval, a third lid fluttered, a filmy, shadowy, cobweb thing, which brushed aside the dream-mists.



"I SEE A NATTERJACK," HE SAID, "A STARVELING, MOUSE-LEGGED NATTERJACK. I SENT FOR A FRENCH FROG"

So in due order, decorously, to open round-eyed vision. The Natterjack was palpably distressed.

His mouth drooped dismally; he shuffled each squat foot in turn.

At last the King Toad spoke.

"I see a Natterjack," he said, "a starveling, mouse-legged Natterjack. I sent for a French Frog."

"Sire," said the Natterjack, his voice a-quiver, "I f-found him, but he v-vanished."

"Fetch him," thundered the King Toad.

The Natterjack fled headlong.

"I shall have to find him," he muttered to himself.

He stumbled on the Salamander. The Salamander, after working for an hour, had partially concealed himself. His smiling face alone was visible, framed by the grass-stems.

"Have—you—seen—the—French—Frog?"

"FETCH HIM," THUNDERED THE KING TOAD. THE NATTERJACK FLED HEADLONG

said the Natterjack, as loudly and as plainly as he could.

The Salamander turned his face away and smiled across his shoulder.

"Have—you—seen—the—French—Frog?" the Natterjack repeated.

The Salamander's face came slowly round again, still smiling. It was too much; no longer could the Natterjack contain himself. He ducked his head and pranced, his legs flung round him anyhow.

So for a mad five minutes; at last he got his answer, suave tones across the intervening grass: "Have I seen what?"

The Natterjack plunged straight into the pond. His nerves were over-wrought, his heart was racing. But for this cooling dive he must have burst. He rose among the lily leaves, and, clutching one, hung slantwise. Slowly the madness left him.

Then he commenced to paddle circumspectly.

He steered a zig-zag course, and, scanning every leaf in turn, came to the outskirts of the cluster. Here he sank slowly down, until his nose alone was visible. The leaf on his right hand was moving. A ripple ran the length of it; then, close beside its stalk, appeared a snout, a quivering trembling snout; then two bead eyes; then a trim velvet body. The Natterjack brought up his head again. No danger here, only a

The Green Toad slowly stretched himself. "THAT?" said he, "that's not French."

At the fifth stone -a bulky slanting one, he sighted the French Frog

water shrew-mouse. The Shrew-mouse took no heed of him. She swam the circuit of her leaf three times, dived once or twice, then climbed upon its surface. Here she performed her toilet. The goggle-eyes in no way disconcerted her. At length the Natterjack found words:

"Can you tell me," he said, politely, "where the French Frog has got to?"

The Shrew-mouse gave a little jump. She had been combing out her tail, which was important.

"The French Frog?" she said; "the French Frog? I'm sick of the French Frog. What between him and the Water Rat—and the queer thing is that neither of them seems to know that the other——"

"Of course, he's very fond of me," she added. "Every day he sings *at* me, and so, of course, when he comes my way, I have to *ask* him to sing; and the worst of it is, when I *ask* him to sing, he *does* sing."

"I think that might be cured,"

said the Natterjack, "if you can tell me where he is."

"Where did you see him last?" said the Shrew-mouse.

"Under the furze-bush," said the Natterjack.

"Under the furze-bush?" echoed the Shrew-mouse; "perhaps then I can find him. Swim behind me."

She slid so neatly off her leaf that not a drop of water reached her back. Then she commenced to paddle, her feet alternate, her square tail trailing, her nose and face awash. Twin ripples spread on either side of her, and, in between them, though their distance widened, the Natterjack swam stoutly, using his squat hind-legs alone, short jerky thrusts of them, and losing at each stroke.

He reached the shore two yards behind, but yet in time to see the last of her, a fluttering wavy tail-tip, which skimmed the summit of a stone and disappeared behind it.

This was disheartening. The Natterjack had spent his strength, and quick pursuit was out of question. He paused and stretched each limb in

turn, scratched his chin doubtfully, and looked about him. He looked first at the water, then at the stone to fix it in his memory, and lastly at the bank above. Here his eyes rested, expressionless at first, lack-lustrous, but presently, with quickened interest, sparkling.

It must be, yes it was, the self-same furze-bush. He stared intently. It was the self-same stone. Perhaps the French Frog still was close at hand; perhaps the Shrew-mouse knew his hiding-place.

He flung his tiredness off him, and started running jauntily.

He had not far to go. Two scurries brought him to the stone, two scrambles to its summit.

There was the Shrew-mouse just below.

She was too occupied to note his coming. She coursed along the water's edge, her head dropped low, her face almost submerged. At times she paused and sniffed the air, her nose upturned and crinkly, her bristles fan-shape.

Then she would drop her head again and probe the water.

The Natterjack watched quietly for a while, but soon impatience mastered him. He crept down and addressed her timidly.

"You said you might find the French Frog," he began.

"I have found him," said the Shrew-mouse; "he's down there—as usual."

"Down where?" said the Natterjack.

"Down in the water," said the Shrew-mouse, "down at the bottom of this pool, a good foot down."

"Would you mind asking him to come up?" said the Natterjack.

"I've asked him for five minutes," said the Shrew-mouse. "He must be fast asleep. I know he's there; I've seen his bubbles."

"How can we wake him?" said the Natterjack.

"You'd better dive," said the Shrew-mouse.

Now Natterjacks are bad enough at swimming; at diving they are hopeless.

"In you go," said the Shrew-mouse.

For very shame the Natterjack went in.

He swam to what he judged a likely spot, ducked down his head, his hands pressed tight against it, and lunged with both hind-legs.

Five Times He Tried, and Five Times His Fat Body, when Half Submerged, Shot Up and Bobbed Afloat

These, splashing on the surface, urged him on, but not one inch below.

Five times he tried, and five times his fat body, when half submerged, shot up and bobbed afloat.

The Shrew-mouse rocked with laughter.

"Again, Natterjack!" she cried. "Again! again!"

The Shrew Mouse drew all Four Feet together and Slithered Eel-wise off the Ledge

Shame-faced, he paddled back to shore.

"Be charitable, Shrew-mouse, be charitable. I did my best."

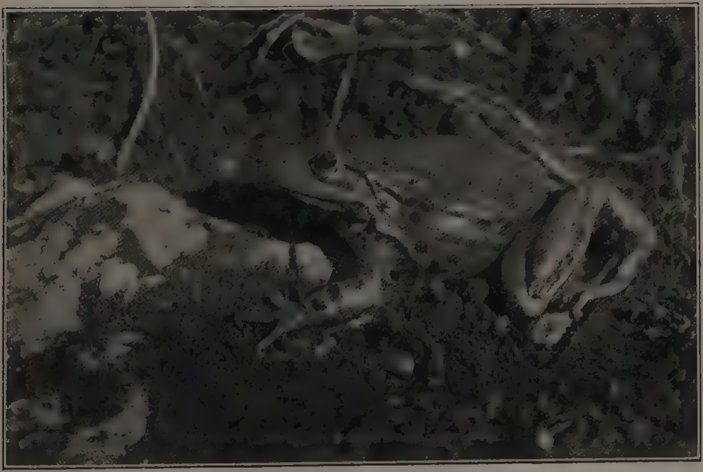
The Shrew-mouse looked at him inquiringly. "Never mind, Natterjack," she said, "I'll fetch him. It's hardly the right thing to do, but still——"

She climbed a ledge, drew all four feet together, and slithered off it eel-wise. She swam a yard and dived. The water closed like oil upon her going. Ten seconds passed and then she reappeared.

"He's coming, Natterjack," she said, and landed close beside him. The French Frog shot up like a cork, and half of him splashed clear above the surface. He took two strokes to reach the shore, and came out moist and shiny. He bristled with apologies—"It was unpardonable. He was altogether desolated. That a lady should have had to dive for him. Alas! he had been dreaming, and his dream, like all his dreams——"

The Shrew-mouse cut him short.

"The King Toad has heard your singing,"



He Bristled with Apologies

she said, "and has commanded your presence. The Natterjack will guide you."

Ambition strove with gallantry, and, for a time, the French Frog wavered.

"And have I your permission, Shrew-mouse?" he said, at last.

"Please go," said she, "then come and tell me all about it." So both departed. The Shrew-mouse watched them out of sight, then swam to open water. She wished the Rat to see her next.

* * * * *

"Sire," said the Natterjack, "it is my privilege to inform you that I have been successful."

The King Toad made no answer. His eyes turned from the Natterjack to his companion, and, after an appropriate pause, he signed with one fore-foot.

The French Frog tiptoed forward.

"I have heard your singing," said the King Toad, "and your singing has annoyed me intensely."

There was a queer strained silence.

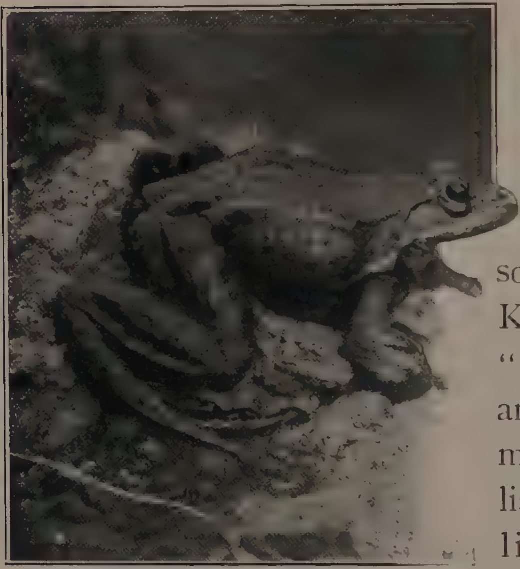
The Natterjack turned to conceal his face, and saw the Green Toad perched above him.

THE GREEN TOAD, TOO, WAS STRUGGLING TO KEEP COUNTENANCE

He too was struggling to keep countenance. Beside him was the Salamander, wreathed in smiles.

"Your singing has annoyed me intensely," repeated the King Toad.

Words failed the French Frog, who could only gulp.



HIS INSIDE WAS RED-HOT

"Sire," he burst out at length, "it was a love-song."

"A love-song!" said the King Toad, "a love-song! and what nice-minded English frog would listen to *your* love-song?"

The French Frog might have scored a point, but prudence checked him.

"I am a poor exile, Sire," he said, "and, when I sing, my heart is far away."

"So will your voice be, soon," said the King affably. "Come out, fire-toads." The fire-toads squirmed from underneath him.

The French Frog eyed them greedily. There are worse eatables than little toads.

"You may have the big one," said the King.

"Sire!" screamed Bombinatrix.

But she was too late. The French Frog's mouth had closed again, and all now visible of Bombinator was one distraught hind leg.

HE LAY AS HE HAD FALLEN ON HIS BACK

"Excellent," murmured the King Toad, and watched the French Frog narrowly. He was worth watching. He paled a dirty ochre, his eyes rolled horribly, he scratched his sides with both hind feet, he dragged at his own throat, he gasped and foamed and spluttered.

"Most interesting," said the King.

But there was more to follow. The French Frog straddled with his toes wide spread; then came an uncontrollable explosion, which flung him four feet skywards, and, at the height of this great leap, loosed Bombinator.

Two thuds were heard, the first a sounding, floppy one, the second farther off and duller.

"I thought that would happen," said the King Toad.

The French Frog slowly pulled himself together, climbed up the slope, and sat with mouth agape. His inside was red-hot.

The Natterjack burst into song, the Green Toad joined him, the Salamander laughed outright, but Bombinatrix, with a heavy heart, hopped silently away.

She was not long in finding him. He lay, as he had fallen, on his back, his hands and feet outspread, his poor throat twitching. But he still breathed, breathed in short, wheezy, gasping sobs, which made his whole frame shudder.

She crept up close and whispered. I cannot tell you what she said, but Bombinator caught the sense of it. He stretched his legs as far as they would go, and clasped his hands beneath his chin. This seemed to ease his breathing, and presently, from every pore, welled a bead-drop of moisture. He lay thus for an hour, and Bombinatrix mounted guard beside him.

At last he moved, but Bombinatrix checked him instantly. "Down, Toad of mine," she whispered, "down for your dear life!"

"What is it now?" he groaned.

"Ducks," whispered Bombinatrix, "Great, Fat, White Ducks!"

"DUCKS," WHISPERED BOMBINATRIX, "GREAT, FAT, WHITE DUCKS"

# ANIMALS' NESTS

## (MARCH)

WHEN a young friend of mine told me the other day that he was going birds'-nesting, and I told him in reply that I was going animal-nesting, I think that, if he had not been a very polite young friend, he would have laughed at me. As it was he laughed *with* me—which was really very nice of him, for he must have been thinking all the time that I was laughing at *him*. But I was quite serious really. I *was* going animal-nesting. I hear you ask at once, "What animal was it?" and I might tease you by saying, "Any animal, of course. When you go birds'-nesting you look for any kind of bird's nest *you* can find, and when I go animal-nesting, I look for any kind of animal's nest *I* can find." But I won't do that, because there are only a few animals' nests which can be found in the same way in which you find birds' nests. All animals make some kind of nest for their babies, and most of them make some kind of nest to sleep in too. They make them in such queer, out-of-the-way places, though, that it would be quite impossible for any boy or girl, let alone a man or woman, to find them; for the first thing to be done would be choose the right hole in the ground, and the next thing to be done would be to crawl down it. Some animals, however, make nests which are not in burrows, and though these are not nearly so easy to find as birds' nests, they can be found if you know the sort of place to look for them in.

There are four animals in this country whose nests can be found without having to dig, and these are the mole, the squirrel, the dormouse, and the harvest-mouse. Three of these build their nests above the ground, and the fourth, "the little gentleman in black velvet," builds the ground above his nest. I am going to tell you something about this one (the mole) first, because his nest, I think, is the easiest to see. I expect most of you know those queer little heaps of earth which are sometimes dotted

FOUR MOLES NESTS TOGETHER. THE BIG HILLOCK OF EARTH ABOVE THEM HAS ALL BEEN TAKEN AWAY SO THAT THEY COULD BE PHOTOGRAPHED about the fields and are called mole-hills (I want you to keep these in your minds for the moment), and I expect those of you who have got a natural history book will have seen a picture of what is called a mole fortress. I want you to put that out of your mind altogether; it is quite wrong. Now, the little mole-hills never have a nest in them, and I am not quite sure why the moles make so many, but if you ever find a really big hill among the little ones, as big as six or seven of these heaped together, and grub down into it (it is quite soft, and you can do this with your hands if you don't mind getting dirty), you will find a mole's nest just about the place where you would find the grass growing if there was no hill at all. In May or June you may find the baby moles. Have a good look at them and put them back, for you won't be able to keep them alive, and the mother mole is sure to come back and look after them—when you have gone.

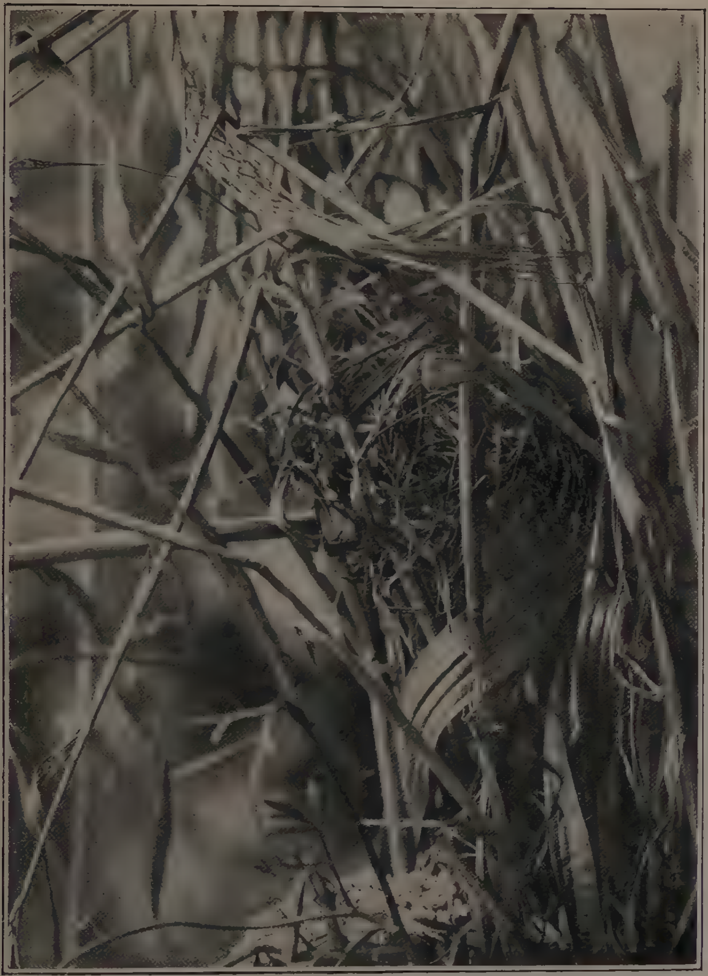
Another animal's nest which is easy to find is the squirrel's, but of course it is no use looking for this anywhere but in wood places of that kind where you know there are squirrels about. A squirrel's nest is in a hole,

THE SQUIRREL, "SQUIRREL MEANS SHADOWTAIL"

or fork of a tree, and always, always out of [illegible]. When it is in a fork of a tree it looks like an untidy bird's-nest, made of rather big twigs. It has a soft, warm lining, though, and, if you can get up to it, you may find the baby squirrels inside in June. If they are furry you can take them away, for then they are quite easy to bring up and tame.

Then there is the harvest-mouse's nest, which is the most beautifully made of all, and is usually to be found in cornfields, built some way up the stalks, and looking just like a bird's-nest except that it is quite round and has no opening that you can see. One can't very well walk about in a cornfield, but you have another chance of finding a harvest-mouse's nest in the hay-time, for they often build in the hay, and once I found one with babies in it, on a hay-cock, where it had been thrown without any one noticing it.

You have two chances, too, of finding a dormouse's nest, for this mouse builds one nest for the babies, and another to sleep in through the winter. Both of them are rather big compared with the hàrvest-mouse's nest, and they are generally made of moss and leaves, often



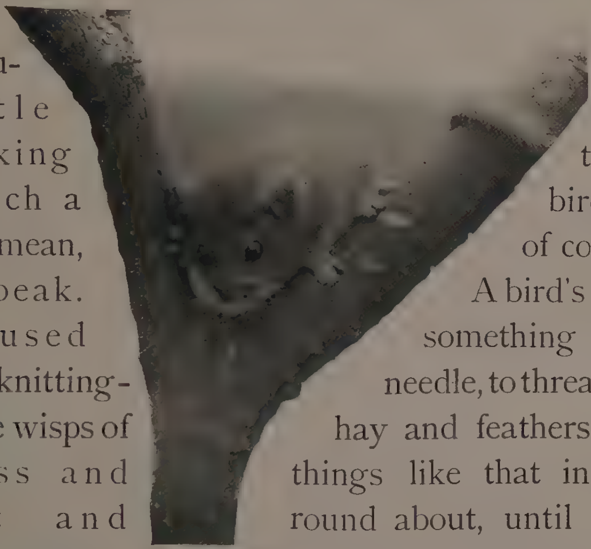
THE HARVEST MOUSE'S NEST
The most beautifully made of all

honeysuckle leaves, which the mother dormouse seems to like, though I can't tell you why.

The dormouse often makes a sleeping-nest at the side of a path through a wood, and does not seem to fasten it very carefully, for one sometimes finds it in the middle of a path, as if the dormouse had turned over in his sleep and sent the whole thing rolling. It may be, though, that some hungry animal has pulled the nest out, and thinking the dormouse dead, preferred to take the chance of finding something alive and warm, and so left it.

If you ever find a sleeping dormouse, which will feel quite cold, you should take the nest and all and keep it somewhere out of doors. For if you bring it into a warm house, it will wake up before its proper time and very likely die; but if you leave it alone until the spring comes, it will wake up as Mother Nature meant it to, and you will have a pet which you will like much better than one which you looked at in a shop window, and could not resist buying.

Now there are other things for you to learn about animals' nests besides the kind of places in which you may hope to find them. To begin with, you must remember that an animal has not got the beautiful little nest-making tool which a bird has—I mean, of course, a beak. A bird's beak is used something like a knitting-needle, to thread the little wisps of hay and feathers and moss and things like that in and out and round about, until they stick where the beak tells them. I expect that animals use their teeth a little in the same way, but they use them more, I think, in biting leaves into strips, in softening hard stalks, and cutting thick grasses into thin ones, and I feel sure that they would find knitting very awkward, because of their thick lips. Most animals, instead of building a nest in front of themselves, build it



THE DORMOUSE

round themselves. The first thing they do is to collect a little store of nest-material, and this they manage by biting and nibbling at anything which they think will be nice and soft, and carrying it away in their mouths. I expect most of you have seen a house-mouse's nest. It is usually made of scraps of paper and wool and fluff and other little rubbishes, which they can pick up behind the walls and under the floor. Sometimes, though, Mousey is not content with a common kind of nest, and gets into a hat-box and spoils a pretty hat, or into a drawer and spoils valuable papers. Once a mouse nibbled the date and the signature off a valuable paper of mine. That was all she took, but it gave me a great deal of trouble, for it was a legal paper, and it had to be done all over again. Sometimes Mousey chooses even queerer places. I will tell you three I have heard of; the first was a tin of gunpowder, the second was a box of cigars, and the third was a plum cake. The last sounds the nicest, doesn't it? But mousey is very fond of tobacco, and I have often seen her, when the

A DORMOUSE'S NURSERY NEST, BUILT IN A FURZE BUSH house was quiet, nibbling at scraps of tobacco which I had dropped on the carpet.

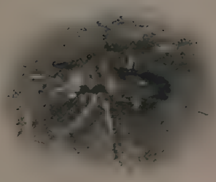
The first thing that animals do, then, is to collect a little store of nest material. The next thing is to dive right into the middle of it.

The Harvest Mouse

When they are well in the middle, they begin turning over and over, with a tug here and a push there, and little curls and flicks of the tail (the Harvest Mouse has the most useful tail of any of our animals, and that, I think, is one reason why his nest is so neat), until in a very short time they have scooped out a hollow in in the ball of grass, or whatever it may be, and are sitting inside it. Sometimes they have to come out and get some more grass, and then the outside of the nest, which is quite springy, closes up like a little trapdoor behind them, and they have to make a fresh way in.

# SOMETHING ABOUT BEETLES

(APRIL)



I EXPECT that most of you have seen some of the wonderful foreign beetles, whose wing-covers gleam and sparkle with colour as though they were studded with jewels; and some of you, perhaps, may have envied the small Black Folks down south, who have the chance of finding such beautiful things. But if you have a microscope, or even a magnifying glass, or if you know some one who will lend you either, you need not envy the small Black Folks at all, for here, in our own dear country, there are hosts and hosts of beetles as beautiful as any in the world. But there is always a something, isn't there? and the something in this case is that they are so very, very small. There is another something, and that is that nearly all of them have such very, very long names. The reason for this is that the young people were not the first to find them. If they had done so they would certainly have given them names which grown-ups could understand, just as the young people of long ago christened Tom-Tit and Jenny Wren, and Daddy Long-legs and Flitter Mouse. All these names have lived since they were first made, and they will live, I think, long after some much more learned names for the same things have been altogether forgotten.

Now I must tell you how to find these beautiful little beetles, and I think that you will be able to find them very soon after you have read these lines, for the spring-time will have come, and the May will have flowered, and there is nothing that the little beetles like better than May-buds. All you have to do is to find a May-tree (it doesn't matter if it is white or pink, and it needn't even be a May-tree so long as there is plenty of blossom on it) and hit one of the branches with a stick, and hold a butterfly-net, or an old umbrella, or a piece of newspaper, or even your hat (an old hat is best) underneath, and catch what falls from the branches. You will find all sorts of things, but among them there are sure to be some tiny long-snouted beetles which are called Rhynchophora. That is a dreadful name, isn't it? but I think that the English word "weevils" is just as ugly. Though they are very small indeed, you will see at once that they have very wonderful colours. Probably you will catch an emerald-green one, and a sky-blue one, and perhaps a little square-shaped scarlet one, which is not very uncommon, and there may come a red-letter day when you catch one of the most beautiful little beetles in the world, who is green and crimson and gold. I have done this twice myself.

The Stag-Beetle

There are so many different beetles in our country that no one has ever collected all of them. Most are very small indeed, like the weevils, but a few are quite big, and I am showing you pictures of some of the largest.

Perhaps I ought to tell you how to know a beetle when you see one. This sounds easy enough, but it is not quite as easy as it sounds. All beetles have six legs (beetles' bodies are divided into three parts, and the legs grow out of the middle part); nearly all of them have strong, horny covers for their wings, and all of them have their skeletons outside. This sounds a very topsy-turvy arrangement, but it is quite true. We have our bones inside, and our flesh outside, but beetles have their bones outside and their flesh inside. Sometimes you may see beetles crushed flat in the road, but often they are trodden on or run over without being killed; and the reason for this is that their hard, outside skeletons prevent their soft insides from being altogether squashed up. Once I ran over a Stag-beetle on my bicycle—it was nearly dark at the time, and I was over him before I could get out of his way. Now a big Stag-beetle weighs about an eighth of an ounce, and I am

The Stag-Beetle
This is the one that I ran over on my bicycle

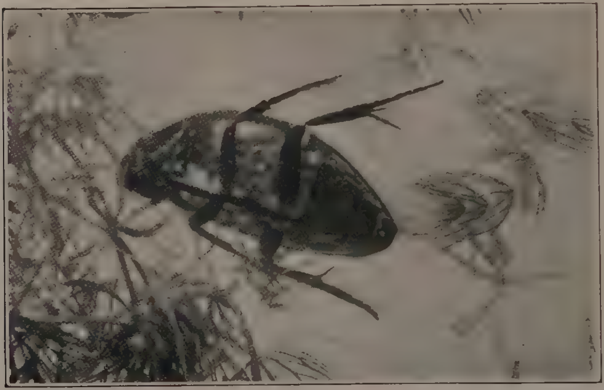
rather a heavy person—indeed, with my bicycle thrown in I should think that I must weigh over two hundredweight, which is about thirty thousand times as much as the Stag-beetle. You can imagine how surprised I was to find that the Stag-beetle was not hurt. I ought to tell you, though, that the road was soft, and that my bicycle-tyres were not blown up hard, so perhaps the Stag-beetle did not get all my weight on his back—but, anyhow, it was a wonderful escape for him, wasn't it?

The two largest beetles in this country are the Stag-beetle and the Great Black Water Beetle. I am not sure which should really be called the larger of the two, for it seems hardly fair to count the Stag-beetle's antlers, and if we leave these out, I fancy that the Great Black Water Beetle has the bigger body. It is curious that these two large beetles should be such quiet, easy-going things, and that they should never dream of eating beetles smaller than themselves. But so it is, for both of them, the Stag-beetle on land and the Great Water Beetle in the ditch, eat scarcely anything at all, and when they do eat are quite content to suck the juices out of plants. One reason for these big beetles eating so little is, I think, the very long time which they have for feeding while they are caterpillars —beetle caterpillars, by the way, are always called "grubs" or "larvæ," and beetle chrysalises are called "pupæ." The grubs of the

Stag-beetle live on decaying wood (you may sometimes find them at the bottom of an old

The Female Stag-Beetle, whose antlers are quite short, and two Stag-Beetle Grubs

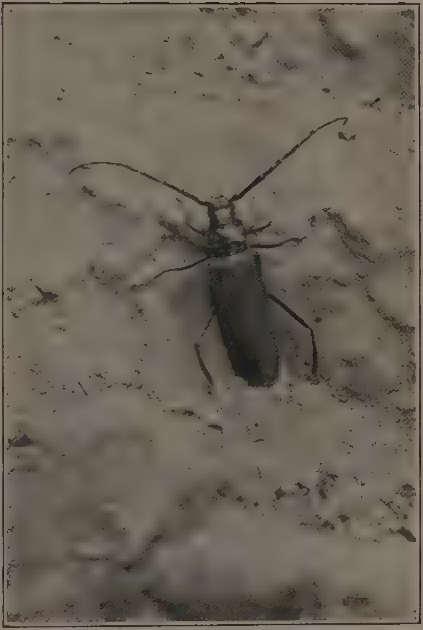
gate post which has decayed under the ground), and take three or four years to become "full-fed." The grub of the Great Water Beetle spends all his time (three or four years, too, I expect) in the water, and I think he feeds on decaying plants, but I am not sure of this. Some people say that



The Great Water Beetle
Who looks as if he was silver-plated underneath

the Stag-beetle uses his great antlers to crush twigs and leaves so as to get the juice. This may be so, but I have never seen him do it.

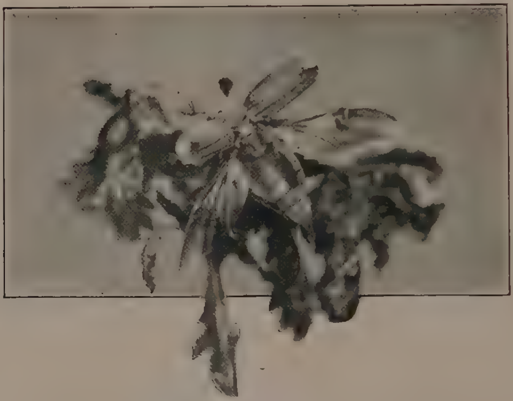
Another big and beautiful insect is the Musk Beetle. As you see in the picture, he has very long horns and a narrow body. He is a beautiful bronze green all over, and must be a wonderful sight when he is flying in the sunshine. I have never seen him fly myself, but people who have say that his legs and horns stream out behind him, so that he must look like a little green Heron. Perhaps the most wonderful thing about him, however, is his scent. I expect most of you know those little round pink sweets which are called "cachous." He smells just like the taste of those, and that is why he is called Musk Beetle.



THE MUSK BEETLE
Who has a very nice smell

Another big beetle I have to show you is the Cockchafer. You must look at his picture carefully, because it shows you how a beetle lifts up his hard wing-covers when he is going to fly. Some beetles, the Burying Beetle for one, turn these wing-covers almost upside down when they are flying, so that the hollowed side is uppermost. I expect that this helps to keep them up when they are flying, and perhaps it helps them to start as well.

Of course you have all heard of the wonderful flying machines which are now being



THE COCKCHAFER RAISING ITS WING-COVERS JUST BEFORE TAKING FLIGHT

made. To fly at all, you must be able to do three things: lift yourself up, keep yourself up, and move about. If you can do these three things just as quickly and just as slowly as you want to, you will be able to fly perfectly. The hardest puzzle of all is how to make a machine which will keep itself up (and the right way up too) without moving about very quickly. This is what many birds can do so beautifully, and I expect that in time (all great inventions take a long time to make perfect, and they are never the work of one man alone, but rather of one man helped by the work of many men who lived before him) machines will be made in which men will be able to fly as perfectly as birds. At present they only fly as perfectly as beetles, but that they should be able to do this is a very wonderful thing. The great difference, in flying, between a beetle and a bird like a gull, is that the beetle has to keep

THE CHURCHYARD BEETLE
When this Beetle is cross, he puts his head down, and rears up backwards as if he were going to kick

going full speed all the time, or else he will tumble down to the ground, while a bird like a gull can poise balanced in the air, with just a flap or turn of his wings now and then to keep himself the right way up.

# BUNNY RABBIT

## (LADY DAY)

### AUTHOR'S NOTE

THERE are "go-to-bury" rabbits and "stub" rabbits. The "go-to-bury" rabbits have the longest ears, but the "stub" rabbits, as any stoat will tell you, are the best for dinner.

Moreover, there are rabbits and bunny rabbits—but all were bunny rabbits once.

BUNNY Rabbit missed the bluebells, though these rang in his birth.

Uprose the kingly foxgloves, tier upon tier of them pink-purple, but Bunny Rabbit missed these too.

A golden world—the ragwort blazing on the slope, below the mellowing corn-field, and, mantling primrose hills, the dawn.

Now Bunny Rabbit was ready.

The burrow winds in four sharp turns and at each one he stubbed his nose. This through a mad desire to keep near Mother, for Mother's tail bobbed in quick jerks, shaving each corner to a hair, and he and all his brothers raced to catch it. They reached the entrance packed as one, but Bunny Rabbit, squirming clear, shot past the uplifted paw, butted his waiting Father, flung off him like a smoke-puff, and landed on his back six feet below.

That is why he has a separate history.

It was indeed sharp change of circumstance. The nursery had been pitch-black, though one short gleam of light had reached it daily. That was when Mother Rabbit snatched her food, and sealed the entrance up for fear of Father. At other times she screened her babies' eyes. So now the sunshine blinded Bunny Rabbit, and pointed grass-stems pricked a skin which nothing harder than breast-fur had touched.

He took some minutes to collect his wits, then twisted upright, and, with frightened eyes, sought guidance.

AND LANDED ON HIS BACK SIX FEET BELOW

But for the woolscrap all would have been well.

Mother Rabbit was close at hand, feeding his brothers with small sprigs of green. Father Rabbit was close too. The sight of his lost wife had softened him. He purred approval. He licked the children's noses.

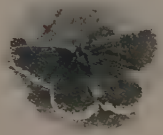
Assuredly the lost would have been found, but for the woolscrap. The woolscrap fluttered, wind-borne, down the slope, and Bunny Rabbit nature-taught, went after it.

It led him far.

It caught on brambles and then flicked away. It plunged in little valleys. It mounted little hills. It bobbed and jerked and twisted, and Bunny Rabbit, panting hard, pursued.

At last he caught it, checked upon a grass-stem, and—*it wasn't Mother after all!*

Bunny Rabbit sat down bewildered. He was hot with running; his ears were prickly; his coat was rumpled. He combed his ears out one by one



It wasn't Mother after all!

brushed down his face, and nibbled all the fur that he could reach. Then he felt better.

The morning breeze gained appetite and sent the woolscrap once more on its travels. Bunny Rabbit took no heed of it—he watched and heard the awakening of the wood. Bird notes, that in the burrow had been restful, now screamed and whistled in his ear. Out from the shelter-side of leaves, out from the heart of flowers, out from the grass stems and from earth itself, came whirring, humming, buzzing insects. In this new myriad-peopled world there seemed small room for loneliness. A red mouse bobbed up from his hole, stared at him curiously, then whisked about and vanished. Bright eyes bejewelled the grass-tufts. Here a flick-footed lizard, here a slow-trailing blindworm, here a squat toad. The day-moths woke and flitted leaf to leaf. The bee-fly clambered up the thyme, poised hovering, vanished slantwise, and vanishing, reappeared.

He combed his ears out, one by one

This was full entertainment, and Bunny Rabbit stared round-eyed. He stared till hunger gripped him. His brothers, a bare

hundred yards away, already had acquired the art of nibbling. He had no teacher, and no wits by which to teach himself. So, though food lay on every side, he starved. He felt a craving he had never known; a tightening of his fluffy body; an ache for Mother. Mother would set things straight for him, but where to find her was beyond his reasoning.

He wandered aimlessly this way and that; he nosed the bushes aimlessly; he stepped on Berus the Adder, because to him an adder, neatly coiled, was merely speckled ground.

Berus the Adder, though infuriate, forebore to strike. Venom is far too precious to be squandered, and baby rabbits are too large to swallow. He swayed his ugly head, and slowly, very slowly, he stretched forward. This was enough for Bunny Rabbit, who spun about and left the wind behind.

Before he had been lured by Hope, now Terror thrust her

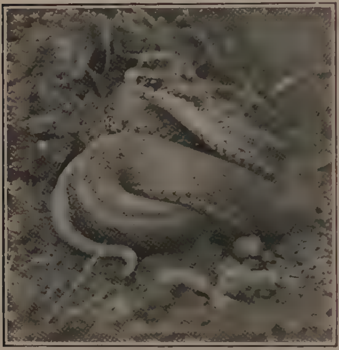
HE WATCHED AND HEARD THE AWAKENING OF THE WOOD goad at him. He leapt two thorn-stumps blindly, and, stumbling, plunged head-deep into the ant-hill.

The ant-hill covers two square yards of ground, and every inch of it is peopled. Though soft, it is no place to fall on. Its citizens resent intrusion—nay, more, resent it actively.

When Bunny Rabbit reached the grass he felt the pricking of a thousand needles. The pain and smart of them half maddened him. He rolled upon his back; he scraped his neck on stones; he writhed; he bit himself.

The pain eased as his torturers dropped off him. Once more he tried to run, but in ten yards his strength was gone. His fore-paws flopped and stumbled, his hind paws dragged, his nose was bruised, his coat was hot and steamy. So he flung down bewildered, scraped an imaginary

bed (a poor half-hearted scraping), slid out his feet, and lay full length, eyes closed.



Berus the Adder

Nothing now seemed to matter much. The hornet moth came whirring past his ears, he never heard it; the drone fly danced upon his nose, he never felt it; the Man lay almost at his side, he never saw him. Poor tired-out baby! Nature had ordered sleep and so he slept.

* * * * *

The Man woke slowly. Nature had been his comfort, too, though sleep had not refreshed him. He rose half-dreaming, with a smile. "All right, little girl," he said; then his face tightened. "It's the same place," he muttered, "just where we lost the locket. First bluebell, then foxglove, then ragwort; blue, purple, and gold. It was the gold she loved."

The woodland rang with voices, but Bunny

Rabbit slept until man spoke. Then he leapt up and found himself a prisoner.

"You sha'n't be hurt, Bunny," said the Man.

Bunny Rabbit ceased his wriggling, and lay quite limp, his eyes upturned, his nose a-quiver.

"Why lying in the open?" said the Man, "foolish, foolish Bunny. What's to be done with you? Stoats and foxes and hawks, Bunny. You can't be left, that's certain. You can't be taken to your Mother, for I don't know your Mother. You can't be taken to your hole, for I don't know your hole. Hungry, Bunny? You look as though you'd travelled. Try some grass."

Bunny Rabbit knew nothing of grass and kept his teeth tight-clenched.

"You must eat something," said the Man.

He loosed one hand to reach a groundsel-top, and Bunny Rabbit, squirming clear, slipped deep into his pocket.

"Well, it's your own choice, Bunny. Now you come home with me."

It was dark and warm and soft inside the pocket. The Man took swinging downhill strides, and, at each stride, the folds changed shape. Now they were loose and twisty, and Bunny Rabbit stretched full length to fill them. Now they were tightened to a ball, and Bunny Rabbit tightened as the centre.

The Man paused as he reached the corn, and stepped two paces up again. He stooped, and Bunny Rabbit was inverted. He rose, and Bunny Rabbit found his feet. But now he was more cramped than ever. He lay deep in the farthest corner. Over and on all sides of him was packed a stifling mass of green.

Then Bunny Rabbit used his teeth, axe-fashion at first, but soon to better purpose. The lesson that he should have long since learnt was now enforced by circumstance.

He bit and tasted.

* * * * *

"Bunny Rabbit," said the Man, "your ears are abnormal."

Bunny Rabbit lay crouched upon the hearthrug, blinking. At first he had found covert in the curtains, but these had been looped up. Then he had squeezed behind the bookcase and

Lay full Length, Eyes closed

been, with difficulty, extracted. Then he had set himself to dig. The carpet had repaid him with some fluff. The doormat and the wicker chair seemed promising, but he made little headway, and so had lain down tired.

"Very abnormal ears, Bunny," the Man went on. "This smacks of the domestic. Then why so frightened?"

But Bunny Rabbit was more tired than frightened.

"More food, Bunny?" A bunch of green had lain upon the floor but every scrap had vanished.

"You've had enough for one day, Bunny. It's bedtime, up you come."

So Bunny Rabbit slept that night on blankets, he and the moonshine. The Man tossed restlessly and Bunny Rabbit watched his moving lips. Twilight crept in soft-footed, and Bunny Rabbit took three little jumps and wormed inside the bed-clothes.

* * * * *

"Slept well, Bunny?" said the Man; "it's more than I have. I've made my mind up, Bunny. I'm going. I can't bear the house. I can't bear the rooms. They're empty, empty, empty."

The Man stepped slowly down the stairs and Bunny Rabbit stumbled after him. He reached the hall and paused, then caught up Bunny Rabbit, and once more ascended. He entered every upstairs room and gazed as though to clinch them on his memory. He entered every downstairs room, and in one room, the loneliest of all, he sat and cried his heart out.

* * * * *

"We're homeless, Bunny Rabbit," said the Man. "But you're the better off, for your home's somewhere here."

They had got half-way up the slope. The Man stood tall among the ragwort, and Bunny Rabbit, with wide, frightened eyes, clung to his shoulder.

The Man stooped down, and Bunny Rabbit slid to earth.

"Now you must find your home or make one," said the Man, and Bunny Rabbit straightway tried to make one. He plunged his fore-paws in the ground and scratched. The dust flew out behind and, in the midst, shot something hard and glittering.

It was a small gold locket.

The Man bent down and picked it up. He opened it and with dimmed eyes he kissed it.

"You've done me a good turn," he said—"of course it's pure coincidence," and Bunny Rabbit watched him out of sight.

Bunny Rabbit watched Him out of Sight

# A BUTTERFLY PAINT-BOX

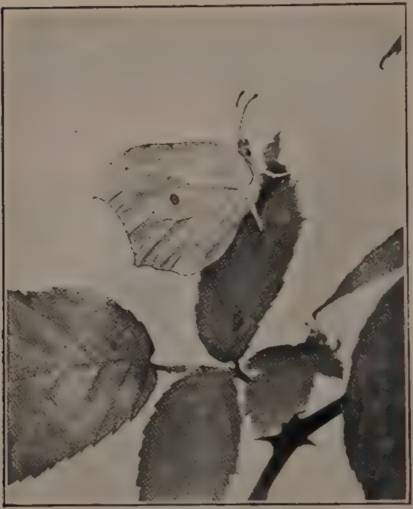
(MAY)

I WONDER how many of my young readers know why these dainty flying creatures are called "Butterflies?

We all know what butter is, and we know, too, that there are quite a number of English words which begin with "butter." It is not a pretty beginning, is it? But there it is. Let us think of a few—*butter*-fly, *butter*-cup, *butter*-wort, *butter*-fingers, *butter*-scotch—why, one can think of half a dozen straight away.

Now this shows us clearly that "butter" is a very old word, and that the people of long ago (who were much less clever than we are, perhaps) must have used it quite naturally when they wanted to describe anything which was squashy, or pasty, or greasy, or slippery, or yellow.

Look at the picture at the top of the next



THE BRIMSTONE BUTTERFLY
After whom all "Butterflies" are probably called

page. I wish I could have given it to you in its proper colours. It looks much nicer like that. Look at it carefully. No other English butterfly has the same pretty curves to its wings, and some of you, I dare say, will know what it is by its shape. But I must tell those who do not know. It is a Brimstone Butterfly, and its colour is bright, bright yellow with an orange spot in the middle of each wing (you can only see one wing in the picture, the other three are hidden behind it; one way to tell a butterfly from a moth is to remember that butterflies' wings close standing up, but nearly all moths' wings close down flat).

It is almost certain that this insect was the first insect to be called "Butter"-fly because of its butter colour. When people began to see that there were other pretty flying things of

The Red Admiral
A Butterfly of many beautiful colours

much the same shape, though of quite different colours, they called them all Butterflies after this first one.

So we speak, nowadays, without ever thinking of how funny it really is, of blue butterflies and white butterflies, and black butterflies, and purple butterflies, and red and yellow and

The Purple Emperor
The most gorgeous Butterfly in England, though not by any means the most beautiful

green butterflies—all the colours of the rainbow, in fact.

We would hardly talk of black butter or purple butter, would we?

Some of you will perhaps wonder why the Brimstone Butterfly was the first to be noticed when there are so many others which are just as common.

I think I can tell you.

The Brimstone is almost always the first butterfly to be seen in the spring. Most butterflies die towards the autumn, and leave eggs behind, which hatch out in the following year, but the Brimstone, and a few others, sleep through the cold winter months and come out in the first warm days of spring and *then* lay their eggs. The Brimstone comes out first of all, often quite early in February, and so he is the first butterfly that is likely to be noticed in the year.

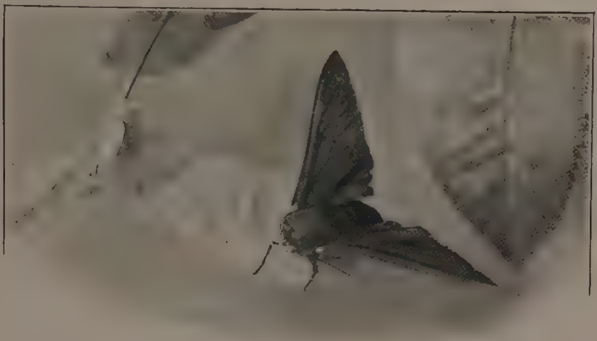
Perhaps his coming out at a time when cows began to give more milk, and butter began to be more plentiful, had something to do with his being called "butterfly," but I think that his colour had more to do with it.

The Clifden Blue

What lovely colours butterflies are! Have you ever fancied a butterfly paint-box? Let us think of a few common colours, and see how we could fill it. Suppose we wanted a blue? Why we should have a whole family of butterflies "The Blues" to choose from, and we should be just as well off for blacks and browns. For red we could take the beautiful scarlet ribbon of the Red Admiral. "Why is he called Admiral?" you ask. Well, Admiral is the same as Admirable, and his old name was Red Admirable. For purple we should have the Purple Emperor and the Purple Hair-streak — there is no purple quite so glorious as the purple that these have on their wings. For orange, the

THE SWALLOW-TAIL BUTTERFLY
Almost a paint-box in itself. It will give you blue, red, black and yellow. It is only found in the Cambridgeshire Fens

Orange-tip and the Clouded Yellow. For yellow, the Brimstone and several others. For



The Black Pepper Moth
Probably quite the blackest Moth we have. They vary very much in colouring though

white, of course, the Whites. Green might bother us a little, but there is one English butterfly, the Green Hair-streak, whose wings are a beautiful green underneath. As he is our only green butterfly I give you his picture. He is the upper butterfly in the first picture and, as you see, quite a little one.

We must not forget gold and silver. When I was young, I expected to find gold and silver in a really nice paint-box, and I do not suppose young people have changed much since then. Silver we should have no trouble about. There is a big family of butterflies called the Fritillaries, who have wonderful patches and ribbons of silver on their wings. I do not think you will find gold, except perhaps a little gold powder, on any English butterfly, but you will find it on several chrysalises. Indeed, Chrysalis means "the little golden one," and the name was given to these queer spiky things because gold patches were so often seen on them.

THE SILVER WASHED FRITILLARY
The silver is in broad bands on the under wings

I have seen little pictures made with the scales of butterflies' wings, with blue skies and green trees and everything. So you see a butterfly paint-box is not altogether a make-believe, though it is not an easy paint-box for young people to paint with.

# TWO WONDERFUL WASPS

## (JUNE)

I EXPECT you all must know the Common Yellow Wasps—the kind that come buzzing into the jam at tea-time; and I want to tell you this about them—that I don't think they ever really get angry if there is jam about and you leave them alone, though, when small people jump up and scream, and edge away from the table, and make bad shots at them with spoons, they get so frightened and bewildered, poor things, that they may sting somebody, because they feel they really must do something exciting.

Perhaps some of you do *not* know that there are seven different kinds of these Yellow Wasps to be met with in this country of ours, and I should be surprised to hear that any of you know *much* about the two Black Wasps whose story I am going to tell you. I say "black," because they *look* black, though both of them have yellow girdles on their bodies. I wish they had English names; for I am sure they both deserve them; and English names are much easier to remember than Latin ones. However, Latin names are the only ones I know for them, so we must make the best of it, and call one of them Spinipes (you must read this as if it were Spiny Peas) and the other Crabro.

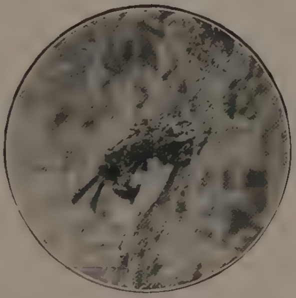
We will take Spinipes first.

This is one of Spinipes' burrows opened up. There is an egg at the bottom on the left-hand side and a caterpillar on the right-hand side. The egg is hanging by a silk thread, but you can't see this

If you look at the picture on the opposite page, you will see what she is like, and, if you look at the picture in Spinipes the Sand-Wasp (p. 151) you will see one of the clever things she does.

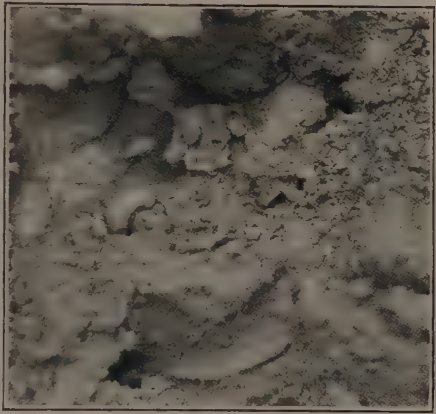
She is building a little tube out of sand which is so delicate that the slightest touch from one of our own clumsy fingers will knock it down like a card-house, but it is strong enough for her to crawl inside; and she has to crawl inside very often, as you will see. I expect you will all want to know how she builds it, and what it is for. I will tell you how she builds it to begin with. You must know first that she has a pair of jaws which work quite differently from ours. Instead of moving up and down, they move across each other from side to side just like a pair of scissors.

The first thing that Spinipes does is to work this little pair of scissors in the sand so as to make a little hole. I am showing you on page 148 a picture of her when she is just starting to dig. Every little pellet of sand she digs out she puts carefully round the outside of the hole, and presently she glues them all together. She carries the glue somewhere inside her, and brings it out when she wants it.



This is a little picture of Spinipes bringing up a grub, which she is clasping beneath her body

Then she digs a little deeper and glues another layer of sand pellets on the top of the first one, and in a very short time she has dug a hole about two inches deep, and built a little tube round the top of it, which is made of the little sand-pellets she has brought out of the hole. Sometimes the tube stands straight up, but more often it bends about half-way and curves downwards. When she has finished it off, and is sure that the hole is deep enough, and the tube is long enough, she goes right down to the bottom and lays an egg, and she hangs the egg by a tiny thread (which she also makes herself, but I don't know how she does it) to the side of the hole a little above the bottom. You will be able to see this in the picture, but you must remember that in this and in some of the other pictures the sand has been cut away so that you can see exactly how the hole goes. Then, if it is a bright, sunny day, as it usually is when she begins digging, she flies away, and in about half an hour's time comes back carrying something clasped tight against her body. What do you think



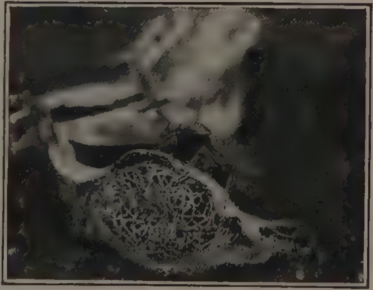
This is the Spinipes' grub feeding on the little green caterpillars

that is? It is a small green caterpillar. She stops a moment at the entrance of the tube, pushes the caterpillar down in front of her, and disappears after it. In a few seconds she is out again and off, and in another quarter of an hour or so she is back again with another caterpillar and so on, without ever tiring, through six or seven hours of a hot June or July day.

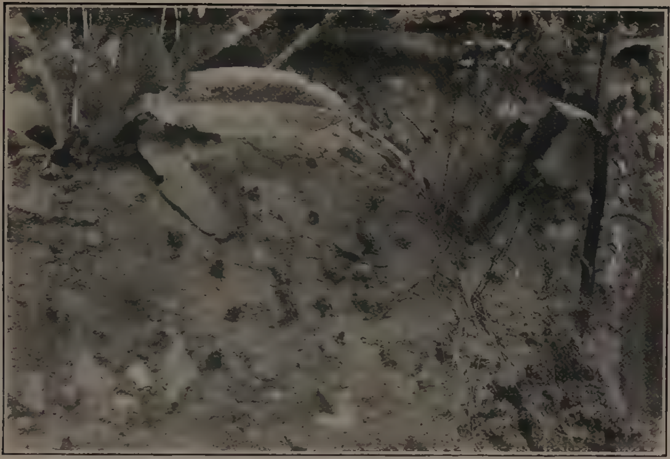
I expect you will have guessed what the caterpillars are for. They are food for the wasp grub when it hatches out of the egg. Generally each hole has between twenty and thirty little caterpillars in it, and sometimes, when caterpillars are scarce, the Mother Wasp has to work hard for three or four days. If you dig into a hole yourself and look at the store of little caterpillars, you will see there is something the matter with them. They seem to be alive and yet they don't seem to be able to crawl. Wise men say that the wasp stings them just enough to make them drowsy so that they can't crawl out of the hole, and can't hurt the wasp grub by jostling up against it. It wouldn't do to kill them, because then they would go bad in the hole before the grub had time to eat them. This sounds rather cruel, but I don't think it is really, because it is quite certain that the caterpillars cannot feel as we should perhaps feel, and we may be quite sure that in the wonderful Nature World everything is arranged for the best, so that only the right

This shows you the cocoon which Spinipes' grub makes for itself. I have opened it to show you the grub, and also the little partition in the shaft above the grub, which is the last thing Spinipes herself makes number of wasp-grubs may be properly fed and grow up to do what it is their duty to do, and only the right number of small green caterpillars may grow up also.

You will wonder, I expect, why the Mother Wasp troubles to make the little tube above the hole. I think I can tell you one reason and you must remember this, because it was just by chance that I found it out. One hot morning in June I watched Mother Spinipes bringing seven caterpillars to her hole. Then a heavy thunderstorm came on, and the rain came down in buckets, and I had to run away for shelter. Late in the evening when it had cleared up a little, I thought I would like to see what had happened to the tube I had been watching, and I went back to the place and found that the



The little beetle that the caterpillars turn into. It is sitting on its own open-work cocoon, from which it has just hatched out. The picture makes it about twice its real size rain had knocked it all to pieces. But I saw something much more interesting than [illegible] been on the face of a sand-cliff, and in a crack close by there was an ants' nest. I found that the ants were running down the wasp's hole and bringing out the caterpillars as fast as they could (I saw them take six away), and taking them along the face of the cliff into their own stronghold. Now the tube that stands out from the sand somehow frightens the ants (I never saw an ant climb out along the tube and down inside it), and so I think that one of the reasons for the tube must be that it keeps away ants and creatures of that kind who crawl about on the face of the sand cliff and like eating caterpillars. It was a long time before I found out what kind of creature the caterpillars stored by Spinipes would have turned into if they had not been caught. I thought that it would have been a small moth, but I was quite wrong. At different times I took several caterpillars away from the tubes, and tried to bring them up, but it was of no



BEFORE THE THUNDERSTORM

AFTER THE THUNDERSTORM

use, for they all died because they could not eat. One day, however, I happened to be sweeping with a butterfly-net in a field of lucerne—it is great fun sweeping, and you should try it, for you never know what you may get next—and I swept up what I knew at once was the self-same little green caterpillar that Spinipes stocked her larder with. She *always* brought the same kind. Well, I got a good many of them by sweeping in the lucerne, and brought them up carefully, and, in due time, they spun little open-work cocoons on the lucerne leaves which I fed them with, and at last turned into small, brown, long-nosed beetles. I need not trouble you with the Latin names of these beetles, but I may tell you that they are a kind of weevil which is very

This is a large picture of Crabro, about twice as big as she really is common and very destructive to clover and plants of that kind. So, if we consider that every Mother Spinipes lays eight or nine eggs, and stocks eight or nine burrows each with about thirty destructive little caterpillars, we must allow that she is a very useful little wasp.

This is Crabro looking out of her hole. The front of her face is covered with bright silver hair, so fine that it looks like a silver plate. The picture is twice her real size

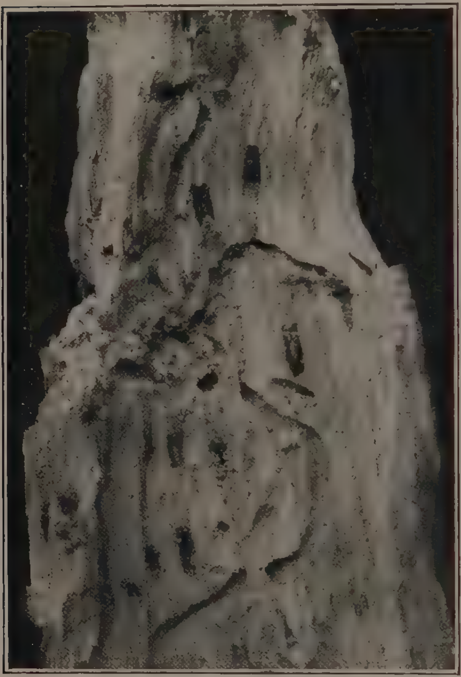
But I am not sure that she is more useful to man than the other little wasp I have to tell of, the Crabro. I found out her usefulness quite by chance, and I expect you will like to hear how. To begin with, I must tell you that all the "Digger" Wasps, as some people call them, Spinipes and the Crabros and several other kinds, store their burrows with insect food for their grubs to feed on. But each one has her own particular idea as

This is how the cocoon looked when I had taken the sawdust away. The plug of sawdust above it leads into the round hole in the wood

to what is the *best* food. One will use nothing but little spiders, another nothing but little flies, another, like Spinipes, nothing but little beetle grubs. And the queer part is that they seldom seem to make any mistake as to the kind of food they want. It will be *one* kind of spider, and *one* kind of fly, and *one* kind of beetle-grub. If there are ever more than one kind, they are always very near relations, and, I suppose, taste very much alike. Now Crabro's store consists of really *large* flies, blue-bottles, and green-bottles — I expect most of you know the beautiful shiny green-bottle fly whose proper name is Cæsar — and how little Crabro manages to overcome and carry off large bottle-flies who are several times her own size and several times her own weight, I cannot tell. But I have found out for certain that she does so, and the pictures will show you how I found out.

Last autumn a dangerous bough had to be taken down from the top of a high elm-tree in my garden. It was perhaps sixty feet above the ground and it came down with a crash and broke up into little pieces. I picked up one of these and found that it was riddled with little tubes and galleries, which I knew were insects' work. But there was something much more exciting than this. A number of the galleries had blind ends to them, and at the bottom of these were

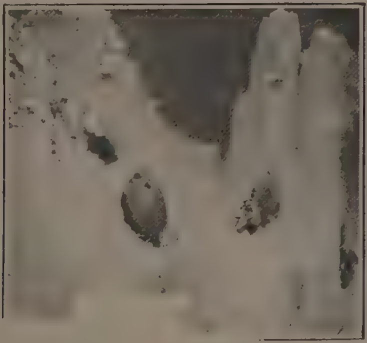
At the bottom of the picture you will see one of Crabro's stores of blue-bottles, and if you look carefully you will see one of the fly's wings stretching out of it



This is what the piece of elm-bough looked like. You will be able to see the little tunnels, and the stores of blue-bottles, which are black-looking, and the plugs of sawdust, in which the pupa cases of the wasp-grubs are hidden. You can see one pupa about half way up

masses of dead blue-bottles, tightly packed, which rested on small pillows of sawdust, and had long plugs of sawdust above them. I opened one of the long sawdust plugs and found, as I half expected to find, that at the end of it next to the blue-bottles, was a small brown papery cocoon, and that inside the cocoon was a wasp-grub. I need hardly tell you that I collected a lot of the wood, and kept it carefully through the winter, and tried to make the little grubs as much at home as if they had stayed up in their tree. To do this I had to keep the wood in moist and rather dark surroundings. Then when the spring came round I sometimes put the wood in the sunshine, when it was not too hot, and in the first week in June I was rewarded for my trouble, for the little wasps hatched out in dozens, and so I was able to find out what they were.

Look up to the top of the trees some warm summer day, and think of the blue-bottle hunt which may be going on above us, and of the wonderful little hunter, Crabro.



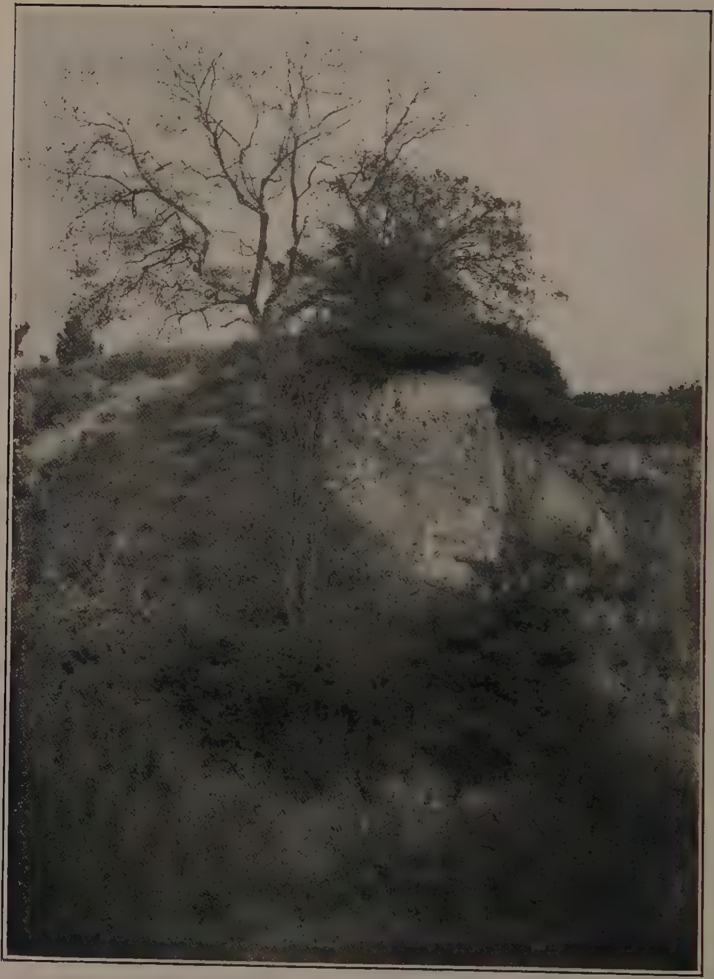
one of the cocoons of Crabro in n-bough. Crabro is just going to out. You can see the little black hole where she has started gnawing

# SPINIPES THE SAND-WASP

## (MIDSUMMER DAY)

### AUTHOR'S NOTE

THIS insect-tale is based on observations of fact extending over several summers. It may interest some of my readers to know the scientific names of the chief characters mentioned. I do not think that any of them have popular names. The heroine is the solitary Sand-Wasp *Odynerus Spinipes*, a blacker and somewhat smaller insect than the familiar yellow Wasps of Town and Garden. The Red King and the Black Queen are the male and female of a solitary Bumble Bee, *Anthophora Pilipes*. The Mistress of the Robes is a "Cuckoo" Bee, *Melecta armata*, which attends on Anthophora, and lays its eggs in the cells made by Anthophora for her own eggs. The grubs of both feed on the honey and pollen which *Anthophora*



THE SAND CLIFF SPLITS THE OLD GRAVEL-PIT IN TWO alone has the trouble of procuring. *O. Spinipes* has several cuckoos, the most officious being the jewel flies, *Chrysis ignita* and *Chrysis bidentata*, whose grubs, I fancy, eat the grub of Spinipes, as well as the food stored up for it. The Ophion is a common Ichneumon fly, and the beetle-grubs belong to a very common and destructive weevil, *Hypera variabilis*.

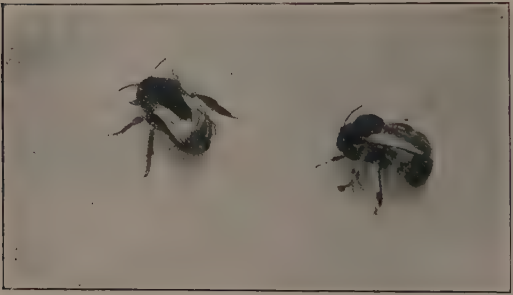
THE Sand Cliff splits the old gravel-pit in two, and, jutting southward, fronts the mid-day sun. The cuttings driven east and west of it have long been clothed with furze and briar and nettle. Rank grass conceals the cart-track round its base, and, on its summit, a thin, root-bound soil gives foothold to a straggling hedge of privet.

Man, needing gravel only, scorned the sand; and, as he turned his back on it, came Nature, gently mothering; and brought it warmth, and light, and life.

First the wild Bees, Red Kings, Black Queens, fringe-footed, shaggy-coated. These made a chambered palace of the cliff, and peopled it within a summer. With them came Lords-in-Waiting and their Ladies, in liveries of black velvet, ermine-faced; and, after these, a fluttering gauze-winged host—jewel-flies ablaze with green and blue and crimson, trim slender-waisted digger-wasps, long-streamered swart ichneumons. And, last of all, came Spinipes herself.

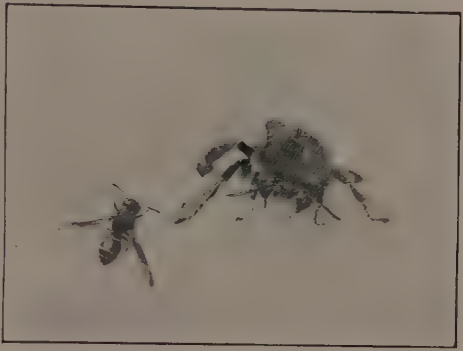
Straight from the blue she dropped on May's last morning, swerved through the hum and racket of the Bees, poised with her smoke-grey wings a-whir, and lighted softly on the centre ledge, her ebony body mirroring the sun, her five gold girdles blazing.

Down dropped a Red King at her side. He stared at her right royally, and kept right royal silence, yet there was kindness in his yellow face, and kindness in the purr of his departure.



First the Wild Bees, Red Kings, Black Queens

Down dropped a Black Queen in his place, and danced and hummed about her, and measured her slim-waistedness, and buzzed her disapproval.—"What is it?" asked she snappishly. "Why does it come in this get-up? Where has it left its furs?"



Down dropped a Red King at her side. He stared at her right royally

"It never had furs," said a voice behind her. It was her Mistress of the Robes.

"I know the family, Ma'am. Queer clothes, of course. But artists, Ma'am, artists to the toe-tips."

"Artists in what?" said the Black Queen.

"In Sand, Ma'am, in Sand. See, she's starting now."

"That's hive-bee's work," said the Black Queen contemptuously.

"The art comes at the finish, Ma'am——"

"Well, call me when it comes," said the

In Sand, Ma'am, in Sand. See, she's starting now

Black Queen, "and keep her off the nurseries, and clean that eleventh cell of mine, and wait till I come back. She soared up skywards, fussily, cleared the cliff's head, circled three times about, and set a straight course south.

"Good riddance!" said the Mistress of the Robes.

"They're like that everywhere," said Spinipes. "What are her nurseries to me? Black Queens and black sand go together. Now this is red sand. I feel the grip and bind of it."

She was quite right. The ledge was rain-washed silt. Sunshine had bleached the outer crust of it, but, under this, its substance was brick-red—fine ground stuff too, damp, clingy, easily tunnelled, and easily smarmed into a hold-fast mortar.

"In that case," said the Mistress of the Robes, "I may as well be going."

Slowly she floated off the ledge, yet kept her face towards it. Slowly she tacked from side to side, in dipping, widening sweeps. Slowly she passed the cliff's east edge, and disappeared.

*Then* Spinipes commenced to dig in earnest.

Her scissor-jaws worked viciously, carved four-square pellets from the sun-baked crust, gripped them and flung them backwards. As she engaged the softer soil, she added feverish foot-work, and scraped, and rasped, and scrabbled it, and kicked it back in dust-clouds. Her head was quickly buried, next her waist, and, presently, she disappeared completely.

"WELL, CALL ME WHEN IT COMES," SAID THE BLACK QUEEN

But not for long.

She backed up to the surface, dragging a sand-load underneath her body. She shook this clear, and, without resting, dived afresh. Ten loads in all she raised, and each one meant a longer spell below. For she had more to do than dig. From end to end her shaft must needs be glazed—and this meant patient mouth-work, deft steadying touches as the mortar set, and skill to keep her tube's round symmetry, and guide it in a gentle curve to end in quiet darkness. Three inches down she sank, and, at the bottom, drove a slant, and hollowed out a store-room.

With this the first stage ended. She left her shaft, and, poising in mid-air, made survey of the ledge. To right she swerved, to left again, outwards and back, upwards and down, until its bearings east and west, from sky above, and earth below, were rooted in her memory.

So far, so good—her morning's work was done, the picture of it fixed into her mind. Upwards she soared until the receding cliff shrunk to a splotch of brown. Once more she took her bearings and was satisfied, set her course east, and, with a dropping arrow's flight, came to the hill-top coppice. She landed on the bramble hedge which skirts its western clearing.

*THEN* SPINIPES COMMENCED TO DIG IN EARNEST

"Good hunting, sister!" said the Ophion Fly. She sat on a high briar-leaf, her rainbow wings uplifted.

"It's hardly time for that," said Spinipes. "To-morrow, p'raps. To-day I feed myself."

"There's lucerne on the slope," the Ophion said, "and something underneath you."

There was a snap and flicker in the grass, and presently appeared a pygmy beetle, long-snouted, dusty-coated, trailing its slow legs wearily.

"D'you *see* it?" said the Ophion Fly.

"I see it, but what of it?"

"It means good hunting, sister. Green grubs, black-headed, fatted. Too small for me, but just the size for you. You'll find them in the lucerne.

"Thank you," said Spinipes, but she was half across the field, a dancing, filmy wisp of pink, wind-borne.

A meal, and then to work, thought Spinipes. It must be done by sunset. It must. It must.

From spray to spray she flitted. Flower after flower she robbed of its pale nectar. Bud after bud she nibbled. At last she found the food she sought, and, with her strength renewed, took flight. Upwards she soared; three times she circled round; then in a straight, unbroken course, whizzed to her shaft. Her pace was scarcely slackened as she entered. Her wings closed lengthways on her back, and, in a moment, she was at the bottom.

Something was there before her.

“GOOD HUNTING, SISTER!” SAID THE OPHION FLY

Something six legged, which kicked and squirmed and writhed. Something which coiled to a hard, slippery ball, and rolled away from capture.

There was no space for it to pass, and yet there seemed no holding it. At last she pinned it with her feet, and, backing, dragged it upwards to the light. It was a radiant jewel fly, a squat, short-waisted, dumpy thing made glorious by its colour. Gems sparkled on it head to tail, sapphire and ruby, emerald and topaz, and, as it struggled, fire of gold blazed and died down upon its jerking body. Instinctively she shook and worried it. Instinctively she flung it down the slope. Head over tail, tight-clenched, it spun, nor opened till it reached the grass below. Here it snapped out to shape again, took instant wing, and, with a glancing flight, regained the ledge.

"An excellent shaft, Madam; quite excellent. No doubt you made it for a special purpose. Now I——"

"Listen to me," said Spinipes, "and mark my every word. If you come near that shaft again—if you so much as touch it with your feet, I'll sting your prying life out."

She charged at it full swing and chased it off the ledge.

"An area sneak!" she muttered, as she dropt underground once more—"and over-dressed at that."

Below the walls showed signs of the encounter—it took ten minutes to repair their glazing. When this was done, she crept back to the entrance. It was high noon. A shimmery haze rose from the heated sand. The hum of work died fitfully away, as, one by one, the homing bees sought shade. The digger-wasps dived deep into their holes; the hunting spiders hid themselves. These were the last to cease from work; the last to cease from play was the rose-chafer. Him the fierce blaze of heat impelled to bursts of clumsy flight. Across the pit and back again, and up and down the surface of the cliff, he whirred and swung at random. Soon even he grew listless, and crept within the shelter of the privet.

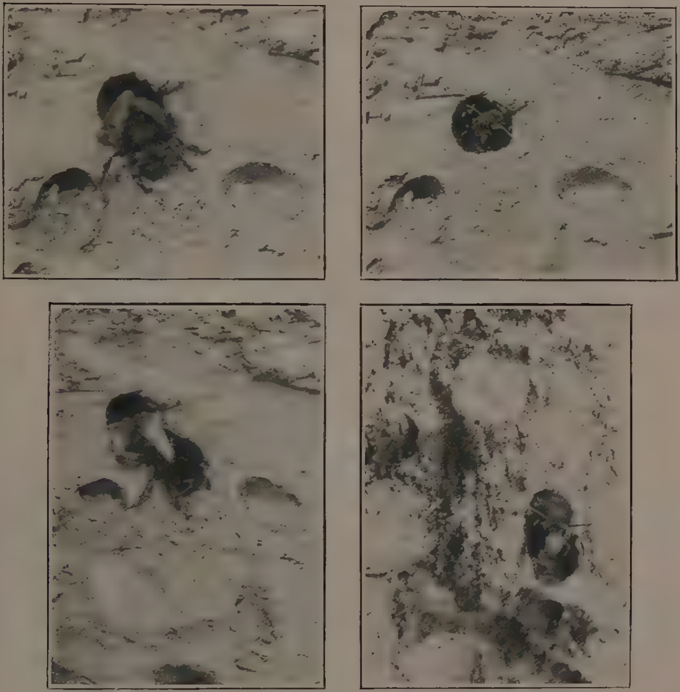
The last to cease from play was the Rose-Chafer

The change came with a catspaw breeze, which rippled from the valley, and, in its quiet passing, fanned the cliff.

It brought back life and energy.

Out flew the bees, a jostling, buzzing throng of them, see-sawing wildly up and down, swinging, reversing, wheeling. At length they towered and broke to work. Out crept the hunting spiders, zebra-coated; the fluttering, dancing, digger-wasps; the lightning-footed ants. Out, last of all, came Spinipes herself.

Her first care was her toilet. She combed her long antennæ out and nibbled at each foot. A circling flight to stretch her wings ended where it had started; and, in a moment, she had plunged below. Two minutes she stayed underground, then came up slowly backwards. Between her jaws was a clean-cut sand pellet. She placed it on the rim of the shaft opening, and, with deft touches from her lips, cemented it in station. She danced about it joyously, with fluttery wings, with airy, buoyant feet, moistened it here, kneaded it there. Once more she dived and dragged a second pellet up, and fixed this too upon the rim. So diving, digging, fixing, shaping, she raised a low ring-parapet. Hour after hour she toiled, tier after tier she added, gluing each pellet firmly to the last, yet leaving open space between each junction. So rose a filagree tube of sand, so fragile that a touch would crumble it; so strong that it would bear four times her weight. Before a shadow reached the cliff, it was a half-inch high.



Out flew the Bees

But shadows meant an end to the day's work, and Spinipes crept down below and slept.

Hour after hour she toiled

The morning sun had shone four hours before she stirred. She peered out round-eyed from her tower, and, twisting on the rim of it, hung for a while head-downwards. A flash of green and crimson light, and something settled under her. It was the Jewel Fly again.

"Fine progress, Madam, and a first-rate tower. I never saw a better."

No word said Spinipes, but straightway launched, and flew at her.

"Out, cuckoo-sneak!" she screamed. "Out! or I sting!"

The Jewel Fly dodged like a gnat, and vanished round the corner.

She certainly meant mischief.

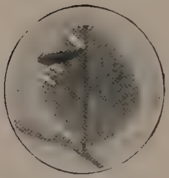
The lowest chamber of the shaft now held a precious thing—a spindle-shaped gold egg, slung to the side-wall by a silken thread. Back darted Spinipes to look at it; and test the fine-spun sling again; and fuss with it; and feel that it was hers.

Then up to her look-out once more. This time she dropped down to the sand and sunned herself contentedly.

THE LOWEST CHAMBER OF THE SHAFT NOW HELD A PRECIOUS THING

The Bees had long been working. Forward and back they passed unceasingly, now and again one towered, now and again one settled; but never did their labour-song, a droning, buzzing, humming chanty, weaken or gather strength. The Jewel Fly had vanished altogether, yet Spinipes still seemed to fear her coming. A full half hour she stayed on guard, and spent the time in adding to her tower, and rounding off its entrance, which, of its own weight, took a gentle down-curve. Then, after one last gaze upon her egg, she flew afield.

"Good hunting, sister!" said the Ophion Fly.



It was a flabby, green, black headed Grub

She sat on the same leaf as yesterday.

"I want them now," said Spinipes.

"The're thousands of them, thousands," said the fly, "and most of them quite fat."

But Spinipes was too engrossed to hear her. Already, swayed by instinct she was hunting, hunting an unknown quarry in the lucerne. From plant to plant, from leaf to leaf, she fluttered. Now she dropped down to earth, and ran this way and that in the green twilight tangle. Now she sped nimble-footed up a stalk. Now she took flight and skimmed above the leaves.

At last she paused, her every muscle trembling, and stared at what confronted her.

It was a flabby, green, black-headed grub, fixed slug-like on its food-plant. A trail of skeleton tracery marked where its jaws had passed, and, as it reached the border of its leaf, it swung its head, and starting near midrib, gnawed yet another ribbon-strip of green.

It ceased to feed as Spinipes appeared, and rested motionless, until her weight made its leaf-platform shiver. Then it dropped silently to earth. But Spinipes reached earth almost as fast, and, quartering every inch of ground, found it and gripped it tightly. It struggled feebly as she pinned it down, and, as she stung it, shuddered. The sting was measured to the millionth part. It robbed the grub of sentient life, yet left it living. So Nature had enjoined. For every infant Spinipes, a score of live green grubs. Robbed of full life, lest struggling they should harm the egg; forbidden death, lest dying they should taint the shaft; lulled to long sleep in mercy. Of Nature's ordinance the grub knew nothing — and Spinipes knew nothing. Her task was to make store of food against the time when her gold egg should hatch. Instinctively she knew the grub was food: instinctively she

paralysed its being: instinctively she laboured to transport it.

Her jaws were fastened tight behind its head. Slowly she dragged it up a stalk until blue sky alone was over her. Then, loosing her mouth-grip of it, and clasping it with all six legs, she soared on high; one long unbroken down-glide brought her to her tower. An instant's pause to shift her grip, and she had pushed the grub within the entrance. Keeping a foot-hold on it, she eased it gently downwards, until it lay beneath her egg. She turned it over on its back and propped it to the side wall, caressed her egg, and mounted to the light again.

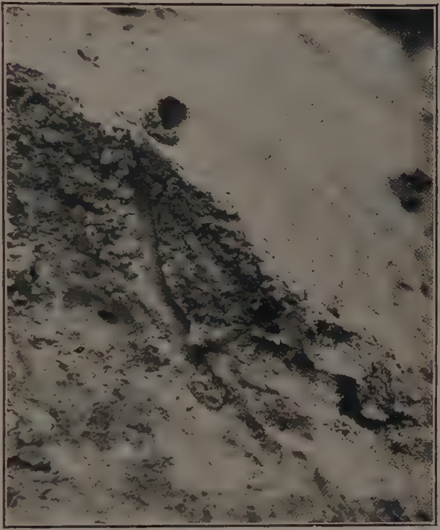
Back to the lucerne field she flew, and, in ten minutes, reappeared, a second grub beneath her.

This, too, she propped up carefully, and so she worked throughout the day, hunting, benumbing, storing. Twelve grubs in all she brought. All twelve she packed into a single pile. A few made feeble movements, and these, for prudence' sake, she stung afresh.

She passed the night contentedly, for it had been good hunting.

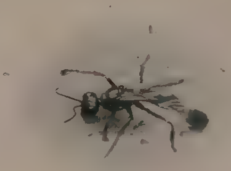
An instant's pause to shift her grip, and she had pushed the grub within the entrance.

"Take that—and that—and that," said Spinipes, and drove her sharp sting home.



Twelve Grubs in all she brought

The morrow's sky was wind-swept. Across it scurried wisps of grey with torn and fretted edges. These raced to catch each other, and fused in rounded velvet clouds. Mass joined to mass, and, surging slowly upwards, veiled the sun. Southwards, where earth met sky, a fine-drawn streak of blue endured, while, here and there, a rent across the veil gave passage to a radiant fan-spread beam. Once only did such radiance reach the cliff. It brought a treacherous message. Out swarmed the bees to snatch the chance of work, and out, with like intent, came Spinipes. Straight to her hunting-ground she flew, but, even as she reached it, came the rain.



For two hours she was weather-bound. At last a watery gleam of light, mirrored in every dripping leaf, enticed her from her shelter. Homeward she sped, and, reaching home, found havoc. Her tower was gone—the rain had razed it utterly—but there was worse mishap than this. Swift-scurrying on the surface of the sand were gangs of ants, and every gang was busy with a grub, one of *her* grubs. They pulled and pushed and shouted to each other, and worked their burdens upward to the cleft which marked their city's entrance. She poised aghast, as with a mocking spit at her, the gaping shaft disgorged another grub. Six sturdy ants came with it, and, ranging up in order, (a pair to tug, a pair to push, a pair to guide,) commenced their long ascent.

The grubs might be replaced in time—what of her precious egg? Downwards she tumbled headlong. Three grubs, the lowest of the pile, were left; her egg— She had been in the nick of time. Her egg was there, nay more, it was uninjured. Her mother instinct told her this as, with quick trembling passes, she felt the hang and weight of it. Her mother instinct swung her round, as down the shaft she heard a scraping footfall. Even as she turned, an ant's black face peered round the lower bend.

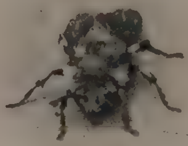
"Out thief!" she cried. "Assassin! Bandit! Robber!"

The ant retreated hurriedly, but all that night she sat at the shaft's mouth, and barred the way below with her own body.

Next day the weather mended—a blaze of sun from an unclouded sky, and, on the sand-cliff, ecstasy of life.

Hard work in store for Spinipes! Three hours she spent in raising a fresh tower, five hours in reprovisioning her burrow. But she no longer worked alone. For others of her race had found the cliff, and other towers, twin to her own, were rising from the sand-ledge. Between them pygmy digger

wasps dug shafts to match their bodies, and trident-tailed ichneumons sailed about them, and sneaking, prying, jewel flies, here, there, and everywhere on mischief bent.

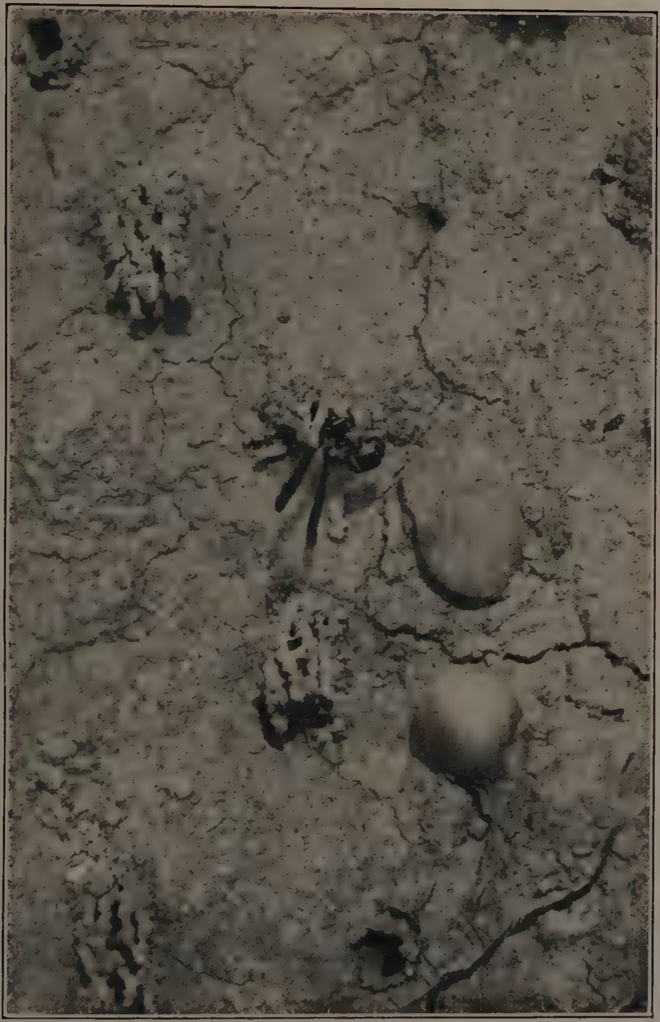


She *caught* her old acquaintance, caught her in the act, and dragged her out, and stung her as was promised.

"I looked inside, that's all—that's really all," whimpered the culprit as she clutched the rim.

"Take that—and that—and that," said Spinipes, and drove her sharp sting home. But jewel flies are toughened folk, and this one, flung aside at last, was in full flight, and merry as a grig, within a minute of her punishment.

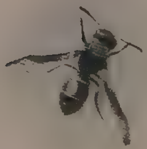
Daily the work grew harder. It took more time to find the grubs, since other wasps were hunting, and soon the increasing bulk of them taxed her full powers of flight. Once, as she neared the ledge, she dropped her burden. It lay where it had fallen till it died, for neither



SHE SANK FIVE OTHER CURVING SHAFTS AND BUILT
FIVE TOWERS TO GUARD THEM

she nor other of her kind had wit to forge, or mend, a link in instinct's broken chain. Once she found strange additions to her store. A human hand had robbed a neighbouring shaft and, with well-meant intention, sought to help her. Vain fancy! Here the self-same chain (to hunt—to catch—to bring—to store) was, end for end, reversed. The alien grubs were, one by one, dragged forth, and, one by one, flung headlong.

Within a week the burrow held full store, a stack of five-and-twenty grubs piled up to meet the egg. This last was at the hatching-point. The silken cord, by which it hung, had lengthened with its growth, and each hour found it closer to its food. All had gone well, and Spinipes' last task, to seal the shaft with a partition-wall, was soon accomplished. Nor did she ever see that egg again. In time the tower itself fell in—I fancy that she helped it, and in its falling, smothered the main entrance.



She sank five other curving shafts—each held an egg—and built five towers to guard them. She made five further stores of grubs; and then, her life-work ended, she crept into a cleft and died.

What of the eggs? you ask. They hatched to golden yellow grubs, which fattened on the food stores, and when, at length, their food was all consumed, they spun them silken coverlets, and changed from grubs to sleeping nymphs. They slept through autumn's dreariness, through winter's cold, through spring's soft showers, and, when at length the warmth of summer beckoned, they burst their bonds, and, working through the sand, flew forth, as those before them had flown forth. So recommenced the cycle. An æon back it was the same. An æon hence—who knows?

# PICTURES ON BUTTERFLIES' WINGS

(JULY)

The Magpie Moth

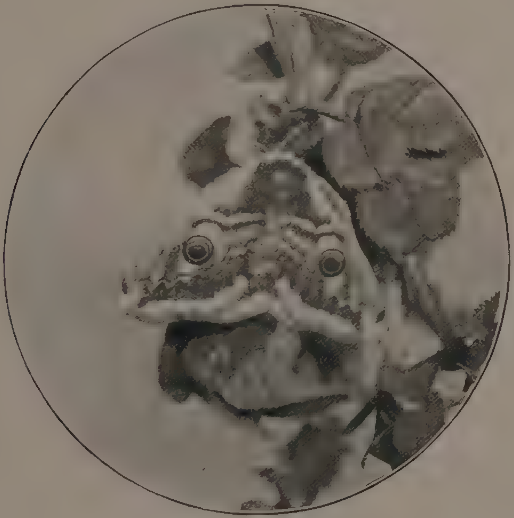
I HAVE already told you of the beautiful colours to be found on butterflies' wings, and how people have actually used a butterfly paint-box to make pictures with. Now I am going to show you some butterflies and moths (quite common ones all of them) which have queer little pictures on their wings ready made—real pictures I mean, faces and animals and things like that.

You may find it, at first, a little hard to see them, for they are puzzle pictures, like those you get in crackers, but once you have found the face, or whatever it may be, you won't be able to help seeing it.

I will start you with quite an easy one. Some of you, I expect, have noticed how often living creatures have a pattern on them like an open eye. This is called an "eye-marking," and is of course quite a different thing from the eye which is used for seeing with. Nearly all our butterflies have an eye-marking somewhere on their wings, and we find it in many other creatures besides butterflies. In birds, for instance (you will remember the peacock at once), and fish (next time you pass a big fishmonger's look out for a John Dory, he has a beauty) and lizards and snakes and frogs and things like that. It is not often seen on animals, though a leopard's or a jaguar's spots are something very like it.

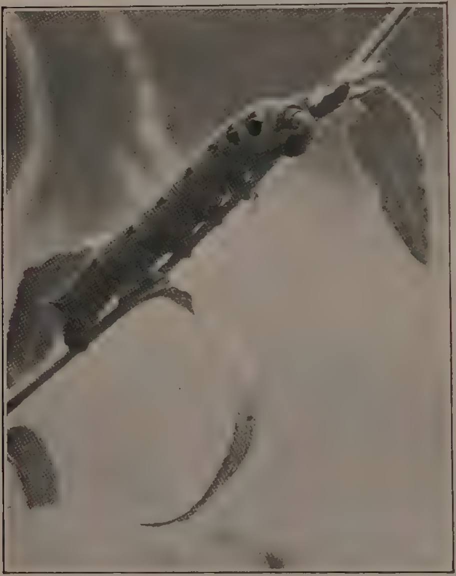
If you look at the picture of the Emperor Moth you will see that there is a very nicely drawn eye on each of his upper wings (his real eyes are quite hidden by his little fur cape); and if you look at the caterpillar of the Elephant hawk-moth long enough, I am sure you will think that he is looking back at you, and that he does not like the look of you much.

Here, again, it is not his eyes that you see, but his eye-markings. In the first picture



THE EMPEROR MOTH

they are just where you would expect eyes to be, and I must explain to you why. He is called the "Elephant" caterpillar because the head-end of him ("head-end" sounds rather queer; but I think that if one may say "tail-end" one may say "head-end") tapers off very quickly from his fat body, and when he swings this end of him, as he often does, it looks like an elephant's trunk. You will see what I mean in the second picture.



The Elephant Hawk Moth's Caterpillar showing his Eye-Markings

Now when he is frightened or angry, he tucks his head in like a telescope close up to the eye-markings, and then these look as if they are really eyes.

Some people think, and they may be quite right, that these eye-markings frighten off birds and lizards and things like that, who would soon eat the caterpillar if they did not think that his eye-markings were really eyes, and that they must have a big body behind them.

You remember the eyes as big as tea-cups in "The Little Tin Soldier"? If you have not read that, read it as quickly as you can.

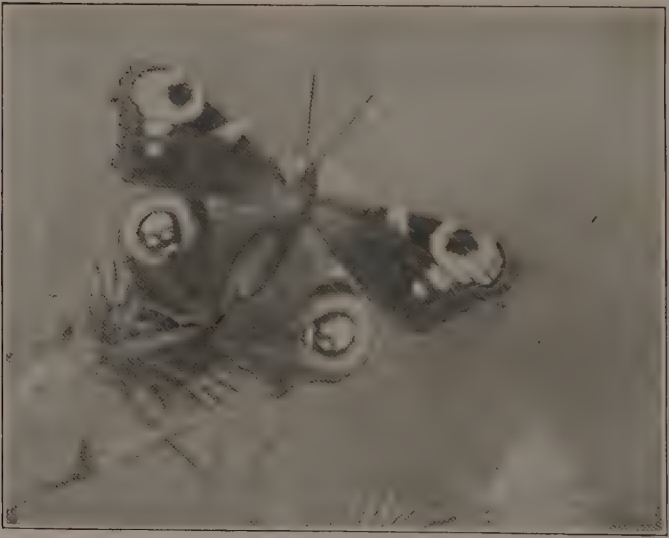
Eye-markings are very easy to see, and I am sure that you will be able to find four of them on the wings of the Peacock Butterfly.

Some people think that these frighten off creatures who might eat him, just like those on the Elephant Hawk caterpillar, and some people think just the opposite — that the eye-markings are so clear a mark that the butterfly's enemies will bite at *them*, and sog et a mouthful of butterfly's wing, instead of the butterfly himself; which is, of course, all for the good of the butterfly.

The Elephant Hawk-Moth's Caterpillar, showing his Trunk

I don't think we can be quite sure that either of these reasons is true, but we may be certain that if the eye-markings were not somehow useful to the butterfly they would not be there.

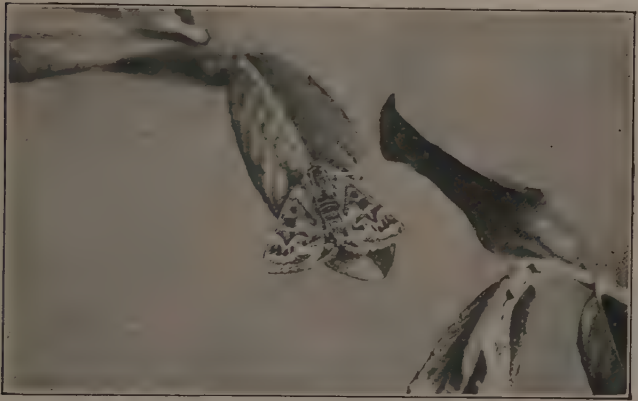
The upper eye-markings on the Peacock have nothing particularly curious about them, but those on the under-wings each form a clear man's face with a big moustache, whiskers, and a bald forehead. If you hold the paper a little



The Peacock Butterfly

way off, you will see it clearly. It is something like Mr. Balfour.

This a full-face picture, but in the other moths, the Mother Shipton and the Magpie, you will find side-face pictures. The Mother Shipton takes its name from having the face of an old witch on each of its upper wings. I will leave you to puzzle this out for yourselves, but I will give you the hint that the old witch has a hooked nose and a pointed chin.



The Mother Shipton Moth

The Magpie Moth has the side face of rather an ugly boy with a button of a nose and his mouth wide open. This is made up by the markings of each pair of wings taken together, and can only be seen when the wings are in a certain position. I will give you a hint here, too, which will help you. The seventh spot on the border of the upper wing, counting downwards, is the boy's eye; and he has a fine head of hair.

Nearly all butterflies and moths have some kind of picture on their wings, and I think that it is nicer looking for these than looking for pictures in the fire, because, when once you have found a butterfly picture, you may be sure of finding it again, and showing it to other people.

# A VERY WEE BEASTIE AND A VERY BIG ONE

### (AUGUST)

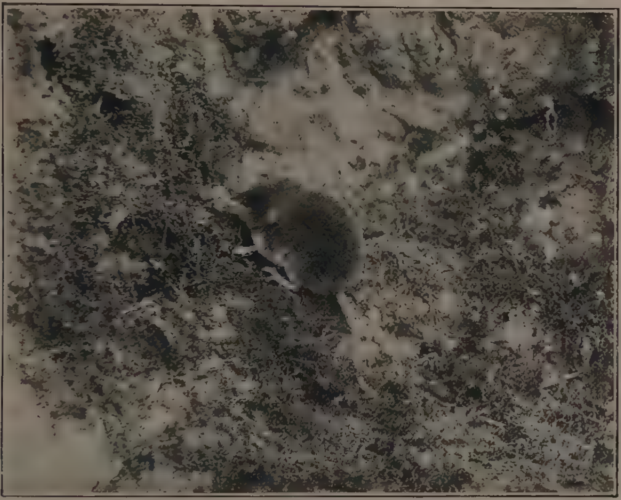
I AM going to talk about two animals this time—one a very big one and one a very small one. I am showing you two pictures of the small one and two of some cousins of his. He is quite the wee-est beastie in this country of ours, and nearly the wee-est beastie in all the world. He is called the Pygmy Shrewmouse, and his name, as you see it printed, is just about as long as his soft, velvet body.

I wonder how many of you know which is the *largest* of our British animals? If you guess quickly you are sure to guess wrong, and so I will tell you, and then there will be no need to put you right. It is the Blue Whale.

Very few of us have ever seen a Blue Whale, or, indeed, have ever had the chance; but he comes to our northern coasts almost every summer, and so, as he is met with in British seas, he is quite rightly called a British animal.

He does not often swim close inshore, for, if he does, he is likely to be caught by the tide, and left high and dry like a jelly-fish, which, indeed, has more than once happened.

The Blue Whales which come to this country are between seventy and eighty feet long (there is really no room to give you a picture of one) and weigh between a hundred and fifty and two hundred tons. The Pygmy Shrewmouse, tail and all, is less than three inches long and weighs about a tenth of an ounce. Now I know that measurements are difficult things for young folks to understand, so I will try to make you see the difference between these two animals of ours in a different way. I expect we all know what a lawn-tennis court looks like. Two Blue Whales would just fill a lawn-tennis court, but if we wanted to fill a lawn-tennis court with Pygmy Shrewmice, we should want five-hundred thousand of them, and if we could lift a Blue Whale on an enormous pair of scales, and tried to balance him with Pygmy



The Common Shrewmouse, who is Half as Big Again as the Pygmy

Shrewmice, we should want—how many do you think? We should want more than *seventy millions* of them.

It is wonderful to think that the wee Pygmy and the huge Whale should belong to the same order of creatures. But it is so. Nearly all the bones in the Pygmy (some are scarcely thicker than a hair) can be matched by the same sort of bones in the Blue Whale. If the Blue Whale were a fish (and he certainly looks like one) his bones would be quite different and quite differently arranged, and from this we know that the Whale is not a fish like a Shark, but an animal like a Seal, or a Pygmy Shrewmouse or one of ourselves.

Now we must look at the pictures. You will [illegible] at once what a long nose the Pygmy has got. This nose is very useful to him, for much of his food is tiny insects, and he pokes his nose into tiny holes after them.

You can't see his teeth in the pictures, which is a pity, for they are very curious teeth, and the front ones, instead of pointing up and down like ours do, point outwards rather, and come together like a pair of tweezers. This helps him to catch insects too, and to pull little snails out of their shells.

I don't think his teeth are strong enough to crack snail shells, but his dark-brown cousin, the Common Shrewmouse (his picture is on page 181), cracks snail shells quite easily, and so does his black cousin, the Water Shrewmouse.

What does the great Blue Whale eat, you ask? I expect you will be surprised to hear that he eats much the same kind of things as the Pygmy—small slug-like creatures, scarcely an inch long, which swarm in parts of the sea. Of course he eats barrelfuls at once.

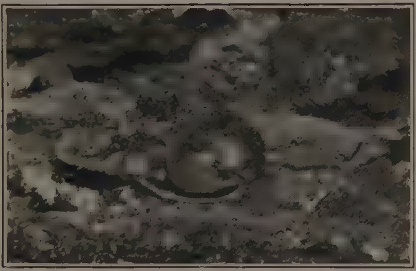
The Water Shrewmouse, who is nearly Half as Big Again as the Common Shrewmouse

He catches them by a wonderful arrangement in his mouth, which is made of what we call whalebone. It is something like the gratings across drain-pipes, which let the water through but stop everything else, and he can lift it up or drop it down as he pleases.

THE PYGMY SHREWMOUSE
His fur has a beautiful purple bloom, like that on a yellow plum; and is so fine that it often shows mother-of-pearl colours

When he is hungry, he takes a huge mouthful of sea-water and lets it out again through this whalebone grating. All the small slug-like things which are swimming in the water are trapped, and, when he has got most of the water out of his mouth, he swallows them.

I don't think that the Whale can have much trouble about getting his dinner; all he has to do is to find the right piece of sea and then open his mouth; but the Pygmy, I think, has to work very hard, as he has to catch everything separately, and he is such a delicate little creature that he is seldom about unless the weather is warm and fine.



This is how the Pygmy coils Himself up to sleep

Then he has to make up for the hungry time when bad weather has kept him in his hole.

In the autumn one often finds dead shrew-mice lying on the paths. Nobody quite knows why they die in the autumn, but I think it is because only a few of them, if any, are strong enough to stand cold and wet and hunger all at once. The rest die just like the leaves die.

You must not think a dead Shrewmouse is like a live one to look at, for he is quite different. When dead, the poor little beastie lies stretched out straight, but when he is alive he is all bunched up together and runs about like a little fur ball on legs.

# IN WEASEL WOOD

## (LAMMAS DAY)

AGAIN the Fox Cub was puzzled. His muzzle wrinkled dubiously, his ears twitched and puckered, he barked (a new accomplishment), he mewed (a newer habit still), and then, since sound proved futile, he sank from his hindquarters forward slowly, grounded his nose between his paws and stared.

This was the queerest happening of all. Queerer than the briar's queer flutter; and the shower of pink petals from it; and the glint of savage little eyes half-way up it; and the savage little chestnut face behind them. Queerer than the scream from the sky; and the rotten elm-branch dancing bough to bough; and cannoning against the trunk; and shattering at his feet. Queerer than the swish through the nettle-bed—swish of a purple snaking shadow, which might have been mere bird, had the trail of it been clumsier, or its ripple more fretful.

Birds he had known since teething. Mother had brought them often; Father less often—scraggy, thin-necked, towsled things, yet mostly of fine flavour; finer than rabbits certainly (except quite baby rabbits); finer, too, than frogs; or lizards; or mice; or snails; or any of the myriad crawl-by-nights on which young teeth gain confidence.

Again the Fox Cub was Puzzled

The Fox Cub stared round-eyed towards the bracken. It certainly was moving—moving in waves which spent themselves abruptly, moving in spins and eddies. Now and again great swathes of it sank downward.

The Fox Cub froze to stone. His muzzle hardened; his ears drooped flat; only his tail (his brush was yet to come) twitched half in interest, half in apprehension.

The bracken started midway down the slope, in straggling, wayward patches. These quickly joined in an unbroken mass, and, on the level ground, gained full luxuriance. A cart-track twisted through them, half of it clear to eyes above, half intercepted.

Beyond, the ground crept up once more—bracken gave place to bramble, bramble to coppice, coppice to the sky.

The Fox Cub's eyes missed nothing.

Movement above he saw—the brown owl changing station. Movement upon mid-slope—the dormouse in the brambles. Movement upon the cart-track—the shrewmouse worrying snails. But these were mere diversions—their interest passed. The bracken furnished a besetting problem—movement inexplicable, sound inexplicable—long-drawn, wheezy breathings, snorts of exertion, sighs of content. There was scent also, heavy musted scent, which came in whiffs and dangled at his nose.

But for this scent he must have smelt the Stoat. The Stoat came dancing up the wind, passed by to right of him, and swung about. He held himself with an air, his body arched, one broad white pad uplifted, his tail curved decorously. From where he lay, the Fox Cub took his measure, then slowly reared himself and yawned. He, too, had teeth to show.

The Stoat's black tail twitched side to side. He met the challenge squarely. The Fox Cub sank full length again. The Stoat tiptoed towards him, and, stretching full-neck forward, nibbled at his fur. So was their peace established.

"Badger," whispered the Stoat, and danced from point to point excitedly, "Badger, grub-grub-grubbing."

HE SANK FROM HIS HINDQUARTERS FORWARD SLOWLY, GROUNDED HIS NOSE BETWEEN HIS PAWS AND STARED

A stunted patch of bracken burst apart, and from its cover lurched a broad grey back.

"He scents you," said the Stoat.

The Fox Cub still lay motionless. It was the broadest back he yet had seen.

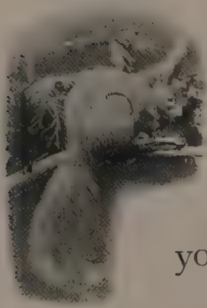
"Should one run?" he whispered. This spelt sheer ignorance of the woods.

"Run?" said the Stoat. "Whoever ran from Badger but a rabbit? Badger is all benevolence. Badger is King. We run towards him."

"Who are *We?*" said the Fox Cub.

"*We?*" said the Stoat. "Why, Marten, Polecat, Stoat, and Weasel. Flesh-eaters All. All of one Brotherhood. Beasties Courageous. Squirrel is living up to us—he does his best with eggs.

"*Squirrel is living up to us?*" It was a cough and splutter from above and Stoat and Cub peered upwards. Squirrel sat twenty feet away, and stamped with indignation. "Squirrel is living up to us? My plumed tail! you wait till Squirrel grows."



THE STOAT TIPTOED TOWARDS HIM

"Never mind him," said the Stoat, "he's silly."

The broad grey back had swung about, and Badger's head was lifted. Slowly it swayed from side to side, slowly it nodded.

"Where are his eyes?" whispered the Fox Cub.

"In his head," chuckled the Stoat.

"His head's a puzzle," said the Fox Cub—which, indeed, it was. Seen from above, and

swinging to and fro, its clean-cut symmetries of black and white foreshortened in confusion.

"Wait till he fronts you," said the Stoat, and presently this happened. The head stopped motionless. A broad white stripe divided it; on either side were triangles of black; beneath was white again, and white tricked out the outline of each ear.

"He's black beneath," said the Stoat, "and grey behind—now you can see him."

Badger had backed a pace or two and craned his neck to snuffle. Ebon-chested he was and ebon-footed.

"Still I can't see his eyes," muttered the Fox Cub, but, even as he spoke, he saw them—steadfast, watchful, gimlet eyes, as black as their black setting.

"And now we *all* have seen you," said the Stoat. Marten has seen you; Polecat has seen you; Weasel has seen you; I have seen you; and Badger has seen you. Fox Cub, you yet have much to learn in stealth. Go, make your peace with Badger."

“What have I done?” said the Fox Cub.

“You've come unasked,” said the Stoat.

“I was brought,” said the Fox Cub.

“That makes no difference,” said the Stoat. “The wood belongs to US!”

“US! us! us!” the hillside caught the echo of it, and filled with sibilant voices.

“My plumed tail! You wait till Squirrel grows.” “Never Mind Him,” said the Stoat, “He's Silly”

"US-S-s-s-s-s!" it was the Stoat departing.

"US-S!" screamed the Squirrel, boldly, from his branch.

"*You?*" sneered the Fox Cub. "You simian rat! You fuzz-tailed, fish-eyed rabbit! Think of your teeth next time you wash your face."

The Squirrel stamped and spat at him. "Wait till I grow," he spluttered. "Wait till my head's as big as yours. Wait till I give up nuts."

"Oh, do be quiet," said the Cub. "I want to think."

"It might be worth my while," he mused. "I *like* this wood."

Badger was grunting softly to himself. His head still swayed and nodded. Now and again he scratched the ground before him. The Fox Cub rose up cautiously, and sat back on his haunches. He saw the whole of Badger now, the iron-grey back, the magpie head, the stumpy tar-brush tail.

He stole two stealthy paces down the slope, but checked as Badger squared himself. Two paces more—and Badger ducked his head, and charged full drive uphill at him.

The Fox Cub bolted straightway, turned sharp upon the hill-crest, ran half the length of it, slid headlong down the sand-cliff (the stones rattling about him), followed the ride for fifty yards, swung sharply to the right, and so, by some strange instinct, reached the gorse-clump.

MARTEN HAS SEEN YOU

He was quite badly scared. His tongue lolled dripping from his mouth; his sides heaved painfully; he felt that, come what may, he must

lie down. So he squirmed, eel-like, underneath the furze, twisted himself about, and, with his head thrust outwards, snuffed and listened. He had outdistanced Badger—of that he soon assured himself. Yet there was something watching him, something whose curious stare he felt. His eyes ranged anxiously from point to point, dwelt on each tuft and hummock in the grass, dwelt long upon a jerking patch of moss, which in due course revealed a white-legged mouse, and in the end cast upwards.

Above him stretched a leafless branch of elm, and on its clean-cut, fretted edge a moving blur intruded—a blur which swelled and shrunk in steady rhythm, and twitched and wriggled forward in short jerks, so closely welded to the bark, so neatly matched in hue to it, that, but for movement, it had cheated sight.

The Fox Cub watched it furtively, his yellow eyes upturned. It checked, and from the end of it dropped a soft feathery plume, and hung and dangled lightly. Its lines were unmistakable, it was a tail. Then, as the Fox Cub gazed, the head took shape—a flat-browed, taper-muzzled head, with shimmery velvet eyes, which seemed to look beyond as well as at him.

Such was the Marten couched. Their eyes met, and he saw her rampant. She leapt from where she lay to where, six feet above, the branch forked double. Astride on this, her fore-feet on the upper arm, her hind-feet on the lower, she faced about and screamed—

"Ai-*yah*-ai-ee! Ai-*yah*-ai-ee! A Fox! A Fox!"

The scream dropped to a whine, then to a bleat—"*Huh-huh-huh-huh! Huh-huh-huh-huh-huh-huh-huh!*"—then swelled into a scream again.

Out leapt the Fox Cub, impudent, and faced the music.

"The last part again, Marten," he cried. "Oh, *please*, the last part again!"

The Marten stared, mouth open. "A cub!" she gasped; "not even a grown fox—a woolly, blunt-nosed cub."

"Do you know where you are?" she added, shortly.

"Yes, I do," said the Fox Cub. "The wood belongs to US. Marten and Polecat, Stoat and Weasel. Flesh-eaters All. All of one Brotherhood. Beasties Courageous. I hope I've got that right—and you all kow-tow to Badger."

"And where do *you* come in?" said the Marten grimly. His coolness took her fancy.

"The first good roomy hole I find," said the Fox Cub. "I like this wood and in this wood I'll stop."

"*Huh-huh-huh-huh-huh-huh-huh*," said the Marten.

"Quite so," said the Fox Cub.

The Marten snuggled down, her eyes a-twinkle.

"I know exactly the kind of hole you'd like," she said.

"Where's that?" said the Fox Cub.

"Listen to me carefully," said the Marten, "and you can't miss it. You know where the holm oak is—of course you don't. Look here.

Get back on to the ride and follow that. It leads you to a hollow."

"It leads two ways," said the Fox Cub.

"You go downhill to the hollow," said the Marten, gently. "Right at the bottom you will find an oak-stump, and if you look inside it (which I don't advise), you will find a family of Polecats."

"AND PERHAPS YOU WILL BE GOOD ENOUGH TO GET HIGHER UP THE TREE, WHILE I COME UNDERNEATH"

"Polecats?" said the Fox Cub.

"Yes, Polecats," said the Marten.

"Turn up to the left at the stump, and make for the silver birch at the top of the rise. The hole is close by that."

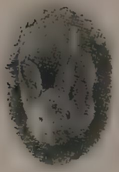
"Much obliged," said the Fox Cub, "and perhaps you will be good enough to get higher up the tree, while I come underneath."

"Certainly," said the Marten. From twig to twig she sprang, so daintily, so airily, that a mere flutter signalled her ascent.

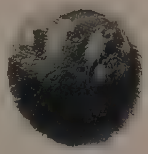
"Will this do?" cried she from the topmost branch. Her forefeet hung on its extremity; her hind-feet curved and dangled; her tail twitched underneath her.

"That will do," said the Fox Cub. Before the words were spoken he was past the tree; before the Marten reached the ground he gained his stride, which was good going. The Marten checked at twenty yards. "I've done my share," she said, and sauntered up the tree again.

The Fox Cub quickly hit the ride, noted its slope, and keeping close in touch with it, slunk velvet-footed through the abutting cover. His pads dropped soft as thistle-down, he scarcely stirred a leaf, and yet the weasel, nosing in the brambles, got wind of him and



squeaked. She was a five-inch weasel, too small to check his progress, yet large enough for mischief. Should she be silenced? He swung about—the scent of her still lingered—and in a moment he was on her trail. Three bounds and he had sighted her. She shot beneath a bramble-patch, issued where he had least foreseen, and tricked him in a maze of straggling roots. He worked back, sulky-faced, towards the ride, but checked ten paces from the oak-stump. Its tenant sat upon it—the purple, snaking, whiplash thing which had perplexed him earlier. Now he saw head to tail of it. The white-rimmed ears, the ochre-banded forehead, the bold eyes, spectacled with brown, the coarse brown-purple body-fur flecked here and there with streaks of shimmery buff—all these he took quiet note of, and presently saw many aspects of them.



The Marten had been right. The Polecat's mate came sneaking from the hollow, and close behind her squirmed four red-brown cubs, loose-jointed yet, but muscular, whimpering pettishly, mauling each other as they ran.

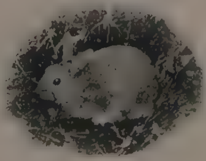
Six Polecats knit by kinship! it was too much for one Fox Cub to face. He cast wide off to right of them, and, creeping quietly round again, regained the ride to leeward. Here it cut through rough coppice. The western slope was thickly wooded, low bushes mostly, chestnut, birch, and hazel, yet high enough to screen what lay beyond. He started to explore the upper ground. At first the incline was easy, but half way up it steepened to a cliff. Coppice gave place to grass and briar, and these in turn to gorse and slithery sand. By slow degrees he zigzagged to the summit, faced round, and scanned the depths which he had left. The oak stump stood out clear against the ride, and, on his right, two hundred yards away, he marked the silver birch. He scrambled down to grass again, and, travelling quickly on mid-slope, found what he sought within two minutes.

Viewed from below—it opened near the sky-line—the hole seemed promising enough. It was a spacious sheltered hole, almost a cavern—the depths of it ink-black, the entrance to it jagged and arching. The Fox Cub stole up cautiously and stopped dead on its threshold. Something was in possession, something which split the darkened void in three; something which crept out slowly from the black, first shadowy grey, then white—a clean-cut *fleur-de-lys* of white.

It was another Badger.

The Fox Cub leapt back sideways, but even so she caught him. She came out (thirty pounds of her) full charge, and caught him low. The attacking badger tosses like a bull, trusting to weight and side-swing of the shoulders. He somersaulted twice. The Badger held straight on her course and disappeared downhill.

The Fox Cub slowly pulled himself together. Had he been bitten? Bruised he was all over, and sick, and giddy; and so, the hole being there, he crept within it, and crawled down



the main shaft for fifteen yards, and took one of four turnings, and followed this until it forked, and then chose the right gallery, and so attained the nest. Rather the haystack, for the making of it had almost stripped an acre. Bracken there was, and bent-grass, thyme and clover, arum stalk and bluebell, thick swathes of them inextricably tangled, bedding enough for twenty half-grown cubs.

There was food also. He found a rabbit's leg at once, then a stiff mummied frog, then half a snake. He made a closer search, and found more rabbit. Each find he sampled. Most of them he gulped, but some he buried carefully for seasoning, scraping small hollows to receive them, and plastering earth upon them with his nose. This done, he coiled himself up tight, and for five minutes dozed with wakeful ears. Thirst brought him to his feet again; thirst and a sense of danger. Clearly this was the Badger's hole—he owed that Marten something. The hole had a main entrance. From this a single shaft led fifteen yards, but then it split, and smaller tunnels joined it, tunnels which might

It was another Badger

end blind. Badgers no doubt were most benevolent, but Badgers seem to charge at sight, and tunnels were poor places to be charged in. The last reflection scared him back to sense. He would be cornered hopelessly, would not know which of twenty turns to take. That settled it. To wait for them was madness. He must go.

He reached the entrance without accident, and dropped soft-footed down the slope. A puddle on the ride was in his mind—a puddle just beyond the Polecat's stump. He reached this safely also, stooped down his head, and lapped his fill.

The wood was oddly silent. Dark clouds had massed low in the sky and streamed to either side, outflanking it. Beneath their dreary shadow the green and russet of the trees faded to lifeless grey. The grass-blades stood up stiffly; the leaves hung stiffly downwards. All that was weatherwise was taking cover. Down from the summit of the ride came the two Badgers, bumping. They travelled leisurely.

First He would root an arum up (a flick with one fore-paw), and She would place her paw where his had been. Then He would stretch tiptoe against an oak, and She would do the same. Then He would wheel sharp right or left, and She would follow like a truck.

The Cub had time to entrench himself securely. He chose the summit of the Polecat's stump, and from it watched the pair of them bump past. They quickened as they faced the rise, and

SHE CAME OUT FULL CHARGE

grunted to each other; then, with their heads down, sped in line uphill.

And with their going came the rain.

It spattered in large warning drops, then swished in sheets. Even before the thunder-peals, and rattle of fierce hail, the stump became untenable. The Fox Cub scrambled down from it, headed a dozen different ways, and, in the end, grown desperate, pursued the retreating Badgers. He caught them as they reached the hole, and saw them topple down it. He gave them half a minute's grace and toppled after.

And in due course of Time, His Wife

What happened next? That I can only guess at. Perhaps there was a Fox Cub course for dinner; perhaps (and this, I think, is likeliest) the Badgers took small notice of his entry. They may have even welcomed him, and, in due course of time, his wife.

# SHEEP IN WOLVES' CLOTHING

## AND WOLVES IN SHEEP'S CLOTHING

(SEPTEMBER)

The Lobster Moth Caterpillar
Pretending to be a Spider

THE wolves and sheep I am going to talk about are all of them insects, or rather all of them but one; for scientific people do not allow us to call spiders insects. Insects have six legs and six legs only, while spiders and mites and those sort of people have eight, and there are a great many other differences between spiders and true insects which would make it quite a dreadful blunder to put them in the same case in the Museum, or to speak of them in the same breath when you know you are talking to clever people.

The Spider, as you might guess, is one of the Wolves, and so is the Dragon in the Water-weed, who turns into one of our largest dragon flies, if he is lucky; while the caterpillars and the Giant Wood Wasp are just silly harmless sheep.

Have you ever thought of the wonderful struggles which are always going on in the insect world—the struggles to eat, and the struggles not to be eaten? Nearly all insects seem to be the food for something or other. Most animals enjoy them thoroughly, so do many birds, and many reptiles and amphibians (frogs and toads) and many fish. I think that spiders live on them entirely, and they have also cannibals to fear among their own kind, for though most insects feed on plant-juice, quite a large number of them turn to stronger meat, and spend their lives in hunting their poor relations. It sounds rather horrible, doesn't it? But we may be quite sure that everything of the kind has been mercifully arranged so that this beautiful world of ours, with all its joy and colour, and its millions and millions of happy children—I do not think that any lives but those of human beings are ever really unhappy—may keep its beauty always. That is why the ichneumon flies have to kill down the caterpillars, for, if there were too many caterpillars, there would be no hedgerows, let alone vegetables for dinner; and the Rove Beetles, who have curly cock-up tails, have to kill down the little boring beetles, for, if there were too many little boring beetles there would be no trees; and the Crabros have to kill down the blue-bottles, for if there were too many blue-bottles—well, goodness knows what *would* happen to some excitable people.

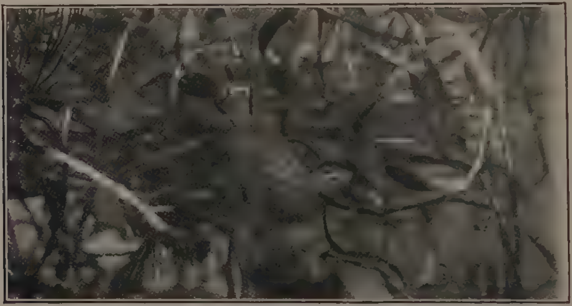
We must believe then that things are best as they are—that a struggle for life is part of a Great Plan, Greater than our human minds can grasp, and that the lives of the hunters are as useful in their way as the lives of the hunted.

Now how would we ourselves act, if our lives depended on catching things? And how would we act if our lives depended on not being caught? I don't think we could add much to what the insects and spiders have taught us. To hunt successfully you must get so near to your quarry that you can kill it. If you are quicker-footed, well and good. If you are slower-footed you may employ something quicker-footed than yourself—this is what happens in fox-hunting; or you may approach without being seen—this is what happens in deer-stalking: or you may hide yourself and wait for your quarry to approach you—this is what happens in tiger-shooting; or, lastly, you may employ traps and snares, which is how most fishing is done. I don't think that any creatures but ourselves employ lower creatures to hunt for them, but the other ways are used by all sorts of animals, and the last two are used more skilfully by insects and spiders than by anything else.

Look at the pictures of the spider on the bramble-blossom. This particular spider belongs to a family called *Thomisus* (I don't know why) and he varies in colour from a bright sulphur yellow to a delicate green, which is an exact match to the green of an

THE SPIDER ON THE BRAMBLE BLOSSOM

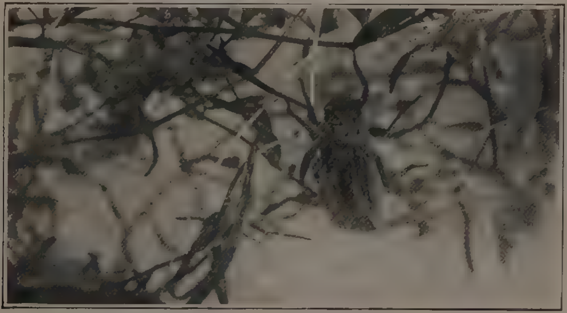
unopened bramble-bud. In three of the pictures (a fly has settled close to the spider in two of them) you will be able to make out



THE DRAGON IN THE WATER-WEED

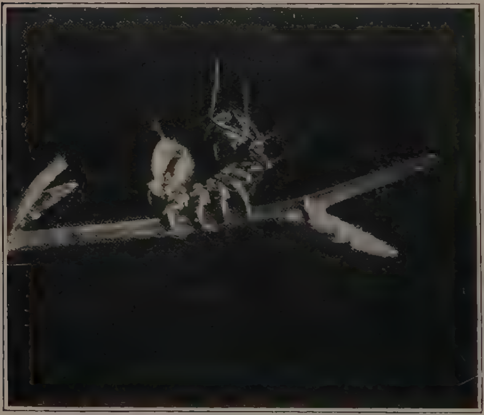
the spider pretty soon, I expect, for he has stretched his legs out. He keeps quite still in this position, and I think he fancies that he is a bramble-bud. But in the other picture I am pretty sure that, if he did not happen to be a rather fat spider, you would find it very difficult to distinguish him, and you may be certain that a fly would find it just as difficult. He is a wolf in sheep's clothing, and the sheep are bramble-buds.

And now for the Dragon in the Water-weed. You will not be able to make him out at all at first, but if you look long enough you will see his body which is too thick to be a piece of weed, and if you then let your eyes travel upwards, you will see his "mask," which is like a pair of folding-doors. These open and let his jaws out when he wants to use them. And his disguise is even more slim than that of the spider, for not only does he mimic the Water-weed round him—his straggly legs, which you should be able to make out also, help him in this—but he actually becomes part of his surroundings, for all over him grows a delicate water-weed, and when he is at the



THE DRAGON IN THE WATER-WEED
This is the back of him, and you can see that he is covered with a delicate water-weed

bottom of the pond, where he spends most of his time, he is *part* of the bottom of the pond, and the creatures which he would eat walk past him carelessly. He is a wolf in sheep's clothing, and the sheep are water-weeds.



The Lobster Moth Caterpillar
As he looks when angry

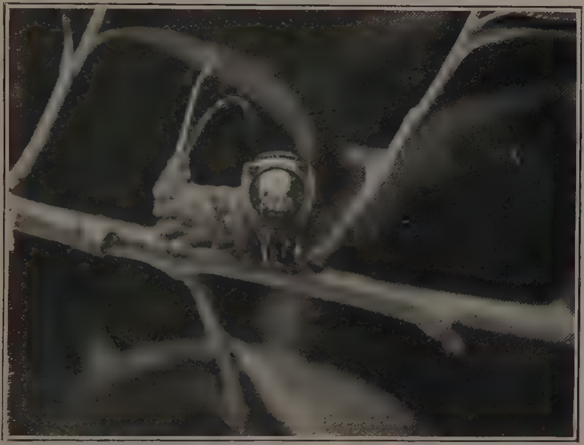
And now for the sheep who are just as clever really as the wolves. Two of these are caterpillars—quite the most curious pair of caterpillars to be met with in this country—and the third is a sawfly. Sawflies get their name from having an instrument with which they can bore or saw, as the case may be, into leaves or trees, and this is the largest one we have in England.

The hunter-insects, as we have seen, disguise themselves so as to get near their victims unawares, and the hunted disguise themselves very often in the same way so as to avoid being seen, but sometimes in such a way that if they *are* seen they may appear to be much more terrible creatures than they really are. And so we have the sheep in wolves' clothing.

The Ichneumon Fly

The hunters of the caterpillars are the ichneumon flies. Ichneumon flies do not eat caterpillars but lay their eggs inside them. They have a special instrument for the purpose, and when the grubs hatch out they gradually eat away the fleshy parts of the caterpillar so that it seldom has strength enough to turn into a chrysalis, let alone a butterfly, or moth, or beetle, as the case may be. Now what is the chief enemy of a fly? Why, of course, a spider. If then something which dreads an ichneumon fly can make itself look like that fly's worst enemy, a spider, it will have a good chance of scoring off the fly.

The Caterpillar of the Lobster Moth, of which I show you two pictures, can do this to a nicety. He has, as you see, an extraordinary shape for a caterpillar, I don't think that any other caterpillar in this country has the same long skinny legs—and he is able to strike extraordinary attitudes which make him look very spidery indeed, particularly from in front, for then the two little spikes at the end of his lobster body appear over the top of his head and look like a spider's pincers. Mother Nature has been very careful of her Lobster Moth caterpillar. When he is quite a baby he looks just like a little black ant. When he is asleep he folds up his legs and looks like a shrivelled beech-leaf—he usually feeds on beech—and, when he is attacked by an ichneumon fly (you can make him think he is being attacked by tickling him with a paint-brush) he turns himself at once into a sham spider, by throwing back his head as far as it will go and shuddering his skinny legs in the air.



The Puss Moth Caterpillar
As he looks when angry

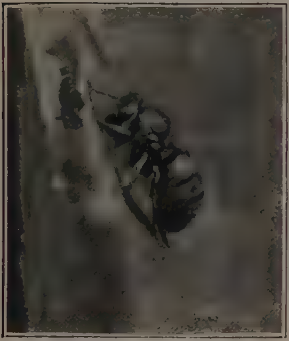
The Puss Moth caterpillar is almost as curious. He, too, strikes fearsome attitudes. He has eye-markings to help him (you will have read about these elsewhere) and he can also squirt out an acid from underneath his chin. These two defences are probably most useful against animals and birds and lizards and creatures of that kind, but they do not seem to be much use against an ichneumon fly, and so Mother Nature has helped him further, by giving him two little pink whip-lashes, which shoot out from the prongs at his tail end when he is really annoyed. When a fly comes near him he brandishes them as you see in the picture.

Our last sheep is the Giant Wood Wasp, who is not a wasp at all, and is much more common in this country than he used to be. He is a handsome black and yellow insect with a body about an inch long, and his wolf's clothing is his black and yellow colour. This is the commonest wolf's clothing of all. You know I expect that a number of stinging insects, wasps and bees, have a black and yellow, or black and red colouring, and you know too, I dare say, that there are a great many flies who have no stings but are coloured in much the same way. Well, it is thought that these flies without stings, of which the Giant Wood Wasp is one, may sometimes avoid attack because they frighten their enemies by looking as if they *had* stings. Suppose a young sparrow ate a wasp, he would probably get stung, and it might happen that next time he saw a black and yellow fly, he would mistake it for a wasp and so not eat it. If this *did* happen, the fly would have owed his life to being black and yellow.

THE GIANT WOOD WASP
It has no poisonous sting, though it looks as if it had a very fine one

# THE BEASTIES' BEDTIME

## (OCTOBER)



THE QUEEN WASP IN HER WINTER SLEEP

She puts her wings *underneath* her body, so that they sha'n't get damaged, and holds on chiefly with her mouth

HOW would you like to sleep straightaway through the winter, and miss Guy Fawkes, and Christmas, and New Year, and Valentine's Day, and skating, and snowballing, and round games in the evening, and having stories read to you by the fire, and all those delightful things which come to cheer us when the weather is damp and gloomy, making us feel somehow that summer is a queer, impossible kind of time, just as in summer we find it hard to imagine what it feels like to be really cold? I want you to remember in this winter which is coming what a number of little creatures in the wide world around you are fast, fast asleep. I want you to think how wonderful it is that

Bill the Lizard

these little creatures are able to dream away the time when there is nothing for them to eat, and to wake again when there is food in plenty.

Every year when the evenings begin to come quicker and quicker, and grow colder and colder, Mother Nature, who is the mother of our dear own mothers, puts her babies to bed at the time which she knows is best. A queer set of babies they are! Babies of such different kinds that it is a wonder she can keep them all in her head, and not have to say sometimes to herself: "Good gracious, I forgot my dormouse; and I don't believe my brown lizard was properly tucked up in the grass-tuft; and as for my prickly hedge-pig, I don't remember where I sent him last."

But Mother Nature never does forget, and never spoils her babies. She whispers "bedtime," and they go.

The little insects go first—the flies, and beetles, and earwigs, and frog-hoppers, and myriads of other tiny creatures which you can see in the grass on any warm day by just lying down and opening your eyes.

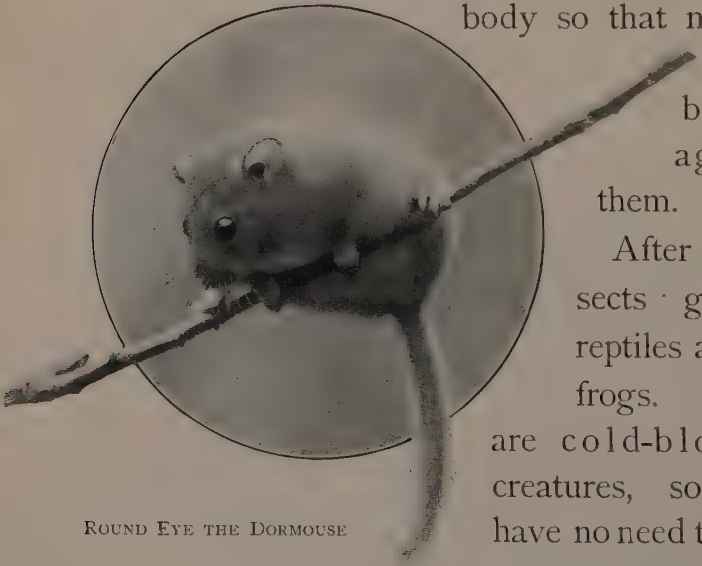
For all Mother Nature's care I fear that most of these die, but some may manage to live through the cold, and among the larger kinds of insects some always do. You remember

Toadums

what I told you about the Brimstone Butterfly! The Queen Wasp is another of the lucky ones.

She creeps into some sheltered crevice, where she can find a shred of something small enough to take into her mouth. This sounds queer, doesn't it? I will tell you the reason. The Queen Wasp sleeps hanging by her jaws, and hardly trusting to her legs at all. You can see what she looks like in the picture, and you must notice that she has tucked her wings right underneath her body so that nothing can brush against them.

After the insects go the reptiles and the frogs. These are cold-blooded creatures, so they have no need to make



Round Eye the Dormouse

a nest to keep them warm, but they don't like to be too cold, and always creep somewhere where the frost will not reach them. Bill the lizard sometimes goes deep down into a large grass-tuft, and sometimes creeps into a mouse-hole. Froggin dives into a pond and wriggles into the mud, or underneath a stone, and there sleeps under the water until the hot sunshine comes again, and he knows, by the feel of things, that it is time to be moving. Toadums prefers to sleep on land. He lies quite flat, with his hands in front of his eyes, and wakes up a little later than Froggin.

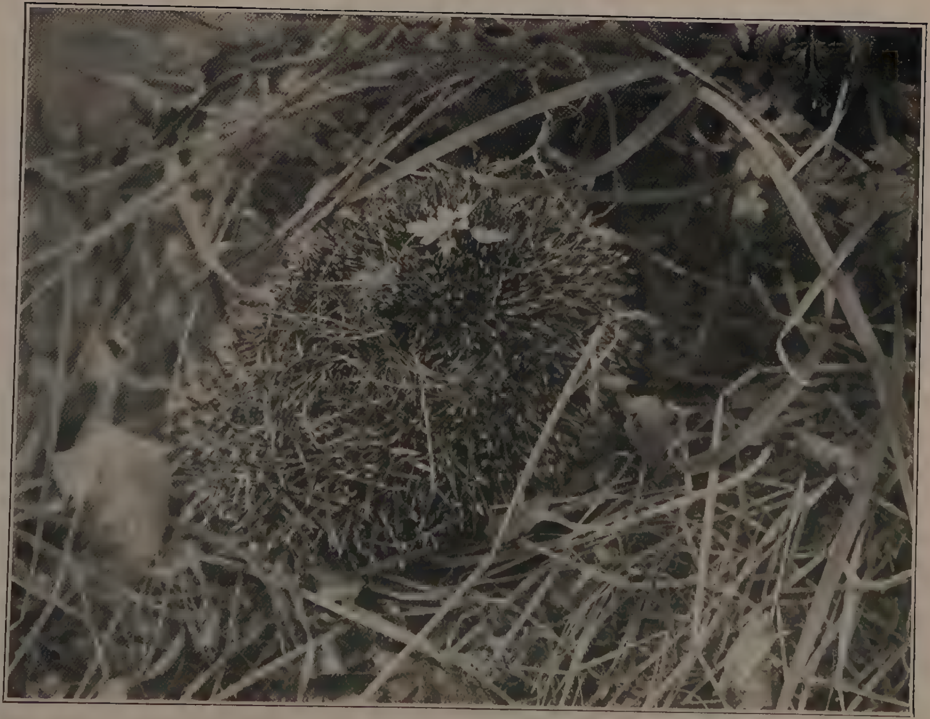
THE DORMOUSE IN HIS WINTER SLEEP
He bunches himself up so as to close all the doors that the air can get in by, eyes, ears, nose, mouth, everything

After these the animals. Round Eye the dormouse goes to sleep about November. He builds a nest of leaves and grass all around himself, and, if the winter is cold, sleeps straight away into April. If the winter is warm, however, he may wake up and eat a little food, and if he is a wise little mouse, as he usually is, he keeps a little store of nuts and seeds at hand in case he *does* wake up. Prickles the hedge-pig does much the same. He has a nest which is even warmer, for, besides the leaves and grass which make the round of it, he rolls his spines into anything soft which will stick to them and so has a nice warm blanket next to his skin. Once he has dropped off to sleep he stays asleep till the spring comes. I don't think he ever wakes up like the dormouse, or ever makes a store of food.

The only other animals which sleep the winter through in this country are the bats, and some of them sleep even longer than the dormouse and the hedge-pig; indeed, they are only awake for three or four months in the year. Sometimes there are crowds of them sleeping together in old caves, and tree trunks, and places like that, and it may be that they half wake up and talk to each other to pass away the time. Indeed, if you know their hole and can put your ear close to it, you can sometimes hear them talking and squabbling—faint little squabblings like the sound of a kettle simmering on the hob when you can just hear the tiny bubbles hitting each other and bursting with bad temper.

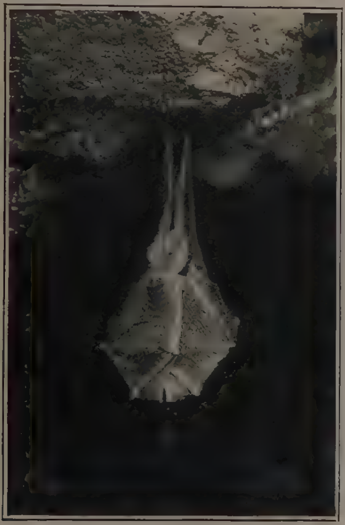
Prickles the Hedge-Pig

When bats are flying about and hunting for moths they often squeak for joy, and then their voice is quite different. It is so high



THE HEDGE-PIG IN HIS WINTER SLEEP

He is not so tightly coiled as when he shuts up to defend himself that some people cannot hear it at all; but you can make a noise just like it by striking two pennies sharply together, and if you can hear that being done when you are several yards away from the person who is doing it, you ought to be able to hear a bat squeak too.



THE LESSER HORSESHOE BAT IN HIS WINTER SLEEP
He is hanging head-downwards and is completely shut up in his own wings, which, you see, are beautifully folded

You have to watch bats very closely before you can tell one kind from another, and I expect some of you will be surprised to hear that there are more different kinds of bats in England than there are of any other kinds of animals. There are, at least, twelve different kinds of English bats, and, as bats now and then seem to get blown over the sea from France, or be brought in the rigging of ships, quite a strange foreign bat may turn up sometimes.

# THE BLUNDERS OF BARTIMÆUS

## (MICHAELMAS DAY)

BARTIMÆUS

BARTIMÆUS was simply mole-tired (which is as tired as a beastie can be), and he lay on his side, with his nose tucked into his waistcoat, and dreamed of Nydia, fretfully. Nydia was half a field away, dozing in a snug fortress of her own, with four fat helpless babies to attend to, and not a passing thought for Bartimæus.

Five times within twelve hours had Bartimæus sought her. Five times had he traversed his main-line tunnel, turned eastward at the junction by the fence, and, breasting up the up-grade full tilt, thrust an inquiring nose at Nydia's nest. Why shouldn't he? Why should he stand on ceremony with four fat, squirmy, wrinkled, hairless infants?

But Nydia had been mightily offended. Each time she had boxed his ears. Each time she had bitten him. And so he had retreated; not for fear, but for black shame—black shame which he had brought upon himself; for Father Moles may not approach Mole babies—that is Mole law, and that has been Mole law since Moles first dug.

Long journeyings these to Nydia, a hundred yards each way at least, but not of length to tire him. He had found time and energy for in-between excursions. One to the mill-house orchard—there staring hillocks proved it; one to the sacred croquet lawn—he left his marks here also; one to the mid-field partridge nest, which meant one egg the less.

A cheerful strenuous day's work; on which, but for the finish of it, he might have slept at ease.

He headed straight for Water

Nydia's last bite and buffet had been real.

She swept her right hand cross-ways, baring her teeth in line with it, and screwing round her shoulders for the swing. Then she lunged backwards viciously. This meant a dragging wound which hurt, and Bartimæus had bitten too, and, as ill-luck would have it, bitten a baby. Nydia flung at him squealing, and, when a Mother Mole flings at you squealing, one prudent course and only one is open.

His nose was bleeding as he started home, and he was hot and thirsty. He headed straight for water. A ten-yard down-slant brought him to the brook. He drank his fill, then, tempted by the coolness, set off swimming. He swam as deftly as a water-shrew, high out of water, with his stumpy tail cocked upward in his wake.

He reached the farther side without mishap, rustled the moisture off his fur, then started climbing. The bank rose steeply over him, but here and there a naked root gave hand-hold, and, shoulder-hoisted over these, he scrambled to the level. On this he travelled easily, using his paddle-hands as sweeps, and scuttling with his feet. From the brookside half-way across the field, and almost to the dried-up middle-ditch, bent grass-stems marked his trail. He

THE BANK ROSE STEEPLY OVER HIM

checked close by the alder-stump, nosed at the ground, and started digging.

Perhaps he scented supper.

The alder-stump is populous still. Its core, now sapless, lifeless touchwood, is riddled through and through. Here moths-to-be, and flies-to-be, and beetles-to-be have spent their youth and fattened. Virtue still lingers in the roots, and, hidden by the forks and bends of them, quiet lives consume, or bide their time. Now and again a human hand "collects" them, now and again a mole, the skilfullest pupa hunter in the world.

Yet Bartimæus was not really hungry—he dug more from ill-humour, wrenching the grass-tufts sideways with his teeth, and slashing fiercely with his hands, until he forced an entrance for his shoulders.

Then his whole action changed.

He stabbed his nose into the soil, and, twisting from the shoulders, screwed it home. Then he drew back his head, turned over sideways, and, with one shoulder and one hand thrust out, gained purchase where his nose had been, and scratched at the soft earth. As one side tired he turned about, and thrust its fellow forward. Sometimes he lay upon his back, and heaved and squirmed and shuffled. Sometimes he screwed his way, his whole frame twisted spirally, half prostrate, half supine.

He drove a six-inch downward slant, then, for one yard, a level course, then upwards half a foot again. His pink nose broke the surface crust, snuffed, and dropped back. The first stage was accomplished, but only the first stage. His tube was choked and littered end to end. He backed nine inches through the loose, reversed, ducked down his head, and charged. Part of the rubble caked as he drove past, and part was swept before him to the outlet. It spurted through and sprayed upon the grass. Six charges raised a mole hill, and left a half-yard tunnel clear. His hands compressed the sides of it to smoothness.

He made a cave and four runs leading from it. Three plunged deep down, and hillocks marked their course. The fourth was near the surface. Its flimsy roof, pressed upwards from below, and dotted end to end with spits of soil, cast a betraying shadow.

It was good feeding-ground. In it were worms innumerable, slow-minded worms which held their ground too long, and footless leathern-coated grubs, grubs of beetles and flies, and eggs innumerable, grasshoppers' eggs, earwigs' eggs, and eggs of smaller fry, some massed in sticky clutches, some dispersed.

He toiled and fed alternately. He made a nest inside his cave, a mass of leaves and grasses dragged down into his surface run (to thrust his mouth out was sufficient), and pulled or pushed into their proper station.

This done he slept, his head tucked down between his hands, his hind feet curled up under him.

All but his ears slept soundly.

* * * * *

*One-Two—One-Two—One-Two.* Twin foot-falls almost over him, and with them a soliloquy deep-toned.

"Comin' right down valley they be. That's them water-works. Down goes springs. Up comes nunkey-tumps. I'll get this one for sure. Here! Tatters!"

Out like a loosened spring leapt Bartimæus, and plunged into his surface run. Half-way along it he stooped dead and listened, the tip of his pink nose thrust through the roof.

Man's booted tread he knew full well; man's voice he knew, but something else was coming, —something which lilted pit-a-pat, something with yielding velvet pads, something four-footed. It danced towards him, louder still and louder, till a hoarse whisper checked it. "Steady you fool! Here good dog! Steady!"

The pink nose dropped. Only one grass-blade stirred, but Tatters saw it.

His every muscle tautened as he pointed.

His hair stood stiff upon his back, his eyes stared fixedly.

For half a minute he stood tense; then

Only one grass-blade stirred, but Tatters saw it

Bartimæus breathed, and at his breath a grass. stem twitched and flickered.

Tatters upreared and poised himself, stayed poised a moment, then, with a vicious dropping lunge, stabbed with his forefeet downward. His muzzle followed instantly, and screwed and ploughed along the run until the weight of roof upcurled checked further progress.

Then only did he raise his head and look back shamefaced at his master. He had completely missed.

"Tatters, you'm grown old, I reckon—like your Master. Never mind, lad, we'll have 'im yet. We'll put a trap down tea-time. Come off it now! Think you can scratch him out?"

Tatters was burrowing tooth and nail, uprooting grass clumps with his teeth, drumming with his forefeet, and showering sods between his hind feet backwards. He raised a wistful, mud-stained face and whined, shook himself doubtfully, started, turned back for one more scratch, then galloped to his master's call.

And Bartimæus had been burrowing too—opening a bolt-hole which should close behind him, passing the dislodged earth beneath himself, and piling it to cover his retreat.

Tatters had all but pinned his body, and that would have meant death to him. Tatters *had* pinned his tail, but, with a wriggle, he had freed himself, out-distanced the pursuing nose,

dived through the nest, and twisting sharply right, reached the west outlet shaft. Fist over feet he scuttled down and screwed himself into the blinded end. He bored two yards zigzagging, then paused for breath. He pricked his stumpy whiskers up, starred the grey fur about his eyes, spread wide his pin-hole ears. He was quite safe. The ground before, behind, and on all sides of him, was dead. Ten minutes passed before he moved, then he worked quickly upwards, and broke the ground beneath a clump of thistles.

"They've gone," said a small piping voice above him.

The nose of Bartimæus, pink and quivery, had issued first, his bullet head had followed, then his great hands and shoulders. The sunbeams played upon his coat, and waves of limpid shimmery blue crept softly too and fro in it.

"They've gone," the Harvest Mouse repeated.

"Excellent!" said Bartimæus. "I can't see who I am talking to—this awful glare!—but it will pass—and meanwhile I can guess at you. You are a mouse; a small mouse, with sharp-pointed toes, a blunted tail, and a warm-orange coat."

"How did you know that?" said the Harvest Mouse.

"I heard you, and I felt you, and I smelt you," said Bartimæus. "You ran up just before I put my nose out. I heard your tail flick after you. I heard the leaves crack underneath your feet. I felt and smelt your colour. If you lived underground like me, you'd notice things."

"Give me the sunshine," said the Harvest Mouse (its beauty doubled on her coat). "If you could see what I can see you'd go back home."

"How's that?" said Bartimæus.

"It's near the fence," the Harvest

Mouse replied, "you'd better run and look at it."

"It would take a lot to scare *me*," said Bartimæus, and puffed his little chest out. His chest was like the mouse's back, warm orange.

"This will scare you," she said. "You strike from here towards the sun and you can't miss it. It throws a shadow at you."

"I'm off," said Bartimæus, and straightway started burrowing.

The Harvest Mouse stood up full length, and watched his ripple fading into distance. Then she dropped down to earth.

"That was a quite nice Mole," she said, "it really *is* a pity."

A surface run is child's play to a Mole. He bores it almost at his surface pace. The roof springs ready-moulded from his back, and lengthens like a paid-out rope behind him.

The fence was reached so suddenly that Bartimæus stubbed his nose against it. He bit and tore it, thinking it was root, then, finding it too hard for him—it was red teak—

worked ten yards back and thrust his head and shoulders above ground.

The sun was low behind the fence. The shadow of it lengthened out towards him, and, in between its clefts, crept dazzling gold-red rays. For full ten minutes Bartimæus' head swayed nodding side to side. Now and again he twitched one hand impatiently. He fought

THE HARVEST MOUSE STOOD UP FULL LENGTH

for a clear vision. Each time he faced the dazzling streams of light, his head fell worsted sideways, and minutes passed before he could look up again.

At last their brilliance faded, and, somewhat to the right of him, a stunted bush took shape.

The stem of it loomed dark in the fence shadow; the leaves were darker still—and there was something queer about the leaves. They were too large, too black, too solid.

The breeze could hardly stir them, and, when they stirred, it was as though they spun.

No more could be determined certainly. He left his run bent on a closer vision.

It was no bush at all. It was a thick-stemmed alder-branch staked in the soil. The leaves were moles—moles like himself, or rather moles which had been like himself. For all were dead. Their bodies dangled pitifully, or, with poor shrivelled outstretched hands, spun as the breeze compelled them.

It was too much for Bartimæus' nerves. He turned about and fled, crashed luckily through his own tunnel's roof, and ran as though mole-ghosts were at his heels.

And something ran ahead of him, and reached the thistle half a yard in front.

"Did you find it?" said the Harvest Mouse. She sat at her old station nibbling.

"You beast," said Bartimæus, "you heartless little beast."

The Harvest Mouse drew herself up indignant.

"You're blinder than I thought," she said.

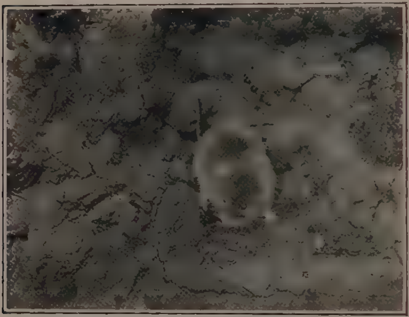
THE HARVEST MOUSE DREW HERSELF UP INDIGNANT

"It was a mean trick," muttered Bartimæus.

"It was a good turn," said the Harvest Mouse.

"Now listen, for I know this meadow end to end. It is no place for Moles. Ask the red-coated Meadow Mouse. Ask the Pygmy Shrew. Ask any one who really knows. Worse things than dogs come into it."

"Weasels!" said the Meadow Mouse. "Oh, never wait for weasels in a run. I really thought that you were one behind me." This to Bartimæus.



"WEASELS!" SAID THE MEADOW MOUSE

"Cats!" said the Pygmy Shrew. Vainly did Bartimæus strive to see her—a sorrel leaf concealed her, head to tail.

"Worse than dogs. Worse than weasels. Worse than cats," said the Harvest Mouse. "TRAPS!"

"We Harvest Mice are never trapped, and stump-tail mice are only trapped by chance—or their own folly. I saw one once. He walked inside because it rained in torrents. Down went the door, and he was drowned, with cheese afloat all round him."

"Cheese is good," said the Meadow Mouse.

"Cheese is glorious," said the Pygmy Shrew.

"There you are. You'd go anywhere for cheese," said the Harvest Mouse. One bite—a snap behind—and then where are you?"

"I'm out in front," said the Pygmy Shrew.

"You'll try that once too often," said the Harvest Mouse.

"Now I hate cheese—the smell of it spells danger. But there are traps and traps—and the worst traps are traps with nothing in them."

"That's so," said the Meadow Mouse.

"You can smell them, can't you?" said Bartimæus.

"You can smell them if you go slow enough," said the Harvest Mouse, "but when do *you* go slow? Now mark my words. It's just about your sleeping time. You'll sleep for your full hour, then you'll wake hungry. You'll rush full tilt until you reach your slant. You'll rush down that, you'll rush along your gallery. *Won't* you now?"

"P'raps," muttered Bartimæus. He had

withdrawn his nose below, and sleep was stealing over him.

"Well, don't!" said the Harvest Mouse.

"Don't!" said the Meadow Mouse.

"Don't!" said the Pygmy.

"Don't what?" said Bartimæus in his sleep.

"Don't rush!" said the Harvest Mouse. "Don't rush. Don't rush!"

* * * * *

He slept for his full hour and woke to find the Pygmy at his side. "It's in your centre gallery," she whispered. "I've slipped right through it twice."

"My *centre* gallery?" shouted Bartimæus. "My *centre* gallery? I'll have my centre gallery clear."

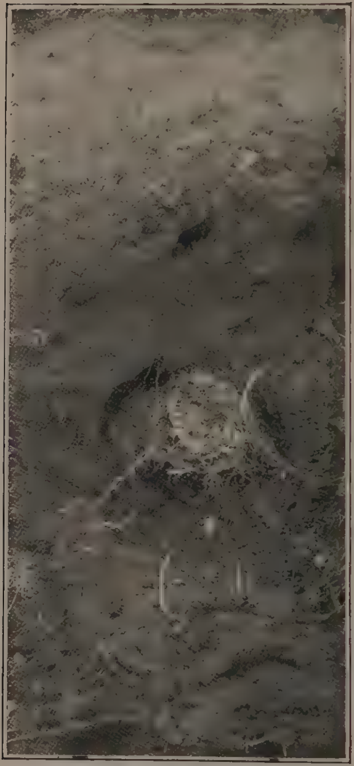
He started burrowing straightway.

"Don't rush!" the Pygmy screamed behind. "Don't rush! It's death to rush!"

And yet it was his rush that saved him.

The crumbled earth which still lay in the bolt-hole, melted before it. Part slipped to either side of him. Part massed before his plunging head, and, reaching the clear down-shaft, dropped. With it there dropped a stone—a rounded half-inch stone, which danced along the gallery at the foot, cannoned from side to side of it, spun round and pulled up short, six inches in advance of him. His senses signalled something in his path. His senses signalled a clear passage through it, and a clear space beyond it. His senses urged more pace. So he crashed on. He stubbed his hands against a ring of iron: the ring gave way: there was a snap and two iron jaws had gripped his waist. But for

"Don't rush!" the Pygmy screamed behind



His Fortress, his own Fortress, had been breached

the stone which jammed against the clinch of them, he must have met his death. And death itself had scarcely brought more torture. It was as though the half of him sped on while half remained behind. The back wrench left him senseless, and so the Pygmy found him. It was the pit-pat of her on his fur, the cobweb flutter of her questionings, which roused him back to life.

"I'm done," he muttered, "done as sure as sure."

"Not you!" she answered bravely, "the trap's not closed—not half. *Wriggle*, dear Uncle, *wriggle!*"

And Bartimæus wriggled.

He wriggled right; he wriggled left; he wriggled up; he wriggled down; he brought his hands to bear upon the iron and with a supreme twist he wriggled free.

Then he saw red.

He flung himself against the trap, and bit at it, and scratched at it, and shook it with his shoulders, and heaved and strained and wrenched at it, until it lay upturned upon the surface. He was convulsed with windy gusts of rage: nose-tip to tail he boiled; nor did he gain composure until the field was far behind, and he had reached the smooth-faced tube which led to his own fortress. Hand over foot he sped the length of it, dived down the U-shaped entrance hole, bobbed up again and climbed into his nest.

His troubles were not over.

His fortress, his own fortress, had been breached. The nest lay open to the day, windswept.

For a full hour he toiled repairing it, then, mole-tired, coiled to sleep.

# SOMETHING ABOUT A CHAMÆLEON

## (NOVEMBER)

"'’Tis green! ’tis green, Sir, I assure ye.'
'Green!' cries the other in a fury.
'Why, Sir, d’ye think I’ve lost my eyes?'
'’Twere no great loss,' the friend replies,
'For if they always serve you thus,
'You’ll find them but of little use.'"

I WONDER how many of you know these lines? Not so very long ago most young people used to have to learn the poem from which they are taken, but I don’t think the poem can be quite such a favourite as it used to be. Perhaps we are all getting to be such good naturalists that we know it is not quite true, for, though Chamæleons change their colours in a very wonderful way, they do not go red, white, and blue, in the way which the poem makes out.

I think I must tell you a little story about a Chamæleon, though some of you may perhaps have heard it before. An old lady once had a pet Chamæleon which she was very fond of, and which her manservant, John, used to look after. He was very fond of the Chamæleon too, and he used to amuse himself by putting it on to different coloured things in his room and watching it change colour. Well, one day, the old lady had a friend to tea, and she thought she would like to show her the Chamæleon, so she rang for John.

"John," she said, "bring in the Chamæleon."

John looked very sorry for himself. "Please ma'am," he said, "I can't."

"Can't?" said his mistress. "Why not?"

John looked still more confused. "Please, ma'am," he said, "he's gone."

"Why, how is that?" said the lady.

"Well, ma'am, I was playing with him, and I put him against my baize apron, and he turned green."

"Well?"

"And then I put him against the red tray, ma'am, and he turned red."

"Yes, yes! Of course he would."

"And then I put him against your tartan plaid, ma'am, and—*and he just bust hisself.*"

You can see his Eye looking back over his Shoulder in this Picture

I am afraid that that story is not altogether true either.

I must try to explain to you how a Chamæleon changes colour. Of course you all know that there are black men, and brown men, and copper-coloured men, and yellow men, and what we call white men; and you know, too, that among white men some have much darker skins than others.

Now the colour of people depends a little on the colour of their blood, for there is a network of tiny veins in the lower part of their skin, but it depends even more on millions of little specks of yellowish and brownish paint which lie in the upper part of their skin. A negro may be as black as your hat outside, but his blood is red all the same, and he looks black because the little specks of paint in the upper part of his skin are very dark and hide the red blood behind them. When people change colour it is because for one cause or another the colour of their blood can be more plainly, or less plainly, seen; and, when this cause is taken away, their old colour returns, for the little specks of paint have not altered in themselves at all.

In Chamæleons, however, and several other creatures, which change colour much more than we do, and keep their changed colour for quite a long time, the specks of paint lie in the *lower* part of the skin, and often there are numbers of them clustered together as if they had been pressed down tight into little bags. These clusters of paint specks have the power of branching out like sea anemones, and afterwards pulling themselves together again like sea anemones when they are frightened. When they are spread out so as to be as large as possible, the Chamæleon is dark-coloured; and when they are drawn in so as to be as small as possible, the

YOU CAN SEE HIS HANDS AND FEET WELL IN THIS PICTURE

Chamæleon is light coloured; and when, as is really most usual, they are spread out in one part of his body and drawn in in another, the Chamæleon is piebald. I expect you will be curious to know what colour the specks of paint are, and whether they are always the same. They are so small that one needs a powerful microscope to see them; but, as far as we can tell, they are always brownish or reddish, so that the greens and blues which are often to be seen in patches on a Chamæleon have to be accounted for in some other way. It would take too long to explain the blues and greens to you thoroughly, but I think I can give you one little hint about them. You all know what mother-of-pearl looks like. If you hold a piece one way it seems a dull grey all over, but if you hold it another you see all the colours of the rainbow, and you can even make the colours move about it if you handle it properly. Now if the colours were paint they would not move about, though they might not be so bright in some positions as in others, and for the present you must be satisfied to know that a Chamæleon skin, besides holding clusters of paint-specks which change their shape, is so wonderfully made that it can show mother-of-pearl colours as well.

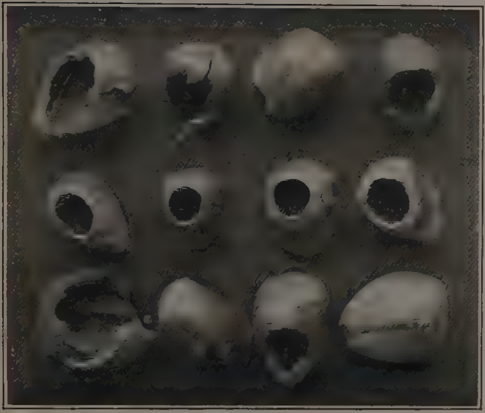
A grown-up Chamæleon is usually greenish in the daytime, with brown patches on his sides. When he goes to sleep at night he turns cream-coloured and his patches become yellowish. A baby Chamæleon is snowy white, and doesn't get spotted even when he is angry or excited, as a grown-up Chamæleon always does.

Now for the Chamæleon pictures. First you must notice his eyes. He has enormous eyeballs, but instead of having two eyelids to each, as we have, he has one eyelid to each (it is really made up of two stuck together), with a tiny round hole in the centre for his eye to look through. This is queer enough, but there is something even queerer about a Chamæleon's eyes. He can move either eyeball up or down or sideways, but he hardly ever moves both the same way, so that he has quite the most wonderful squint in the world, and often keeps one eye looking over his shoulder while the other looks straight in front of him.

Next you must look at his long skinny arms and legs, and especially at his hands and feet. Like ourselves he has five fingers or toes on each, but they are differently arranged from ours. You must remember, of course, that our thumbs are really fingers. On each hand a Chamæleon has three thumbs and two fingers, and on each foot he has two great toes and three ordinary toes. .

# THE TRAIL OF NIMBLE BEASTS

## (DECEMBER)

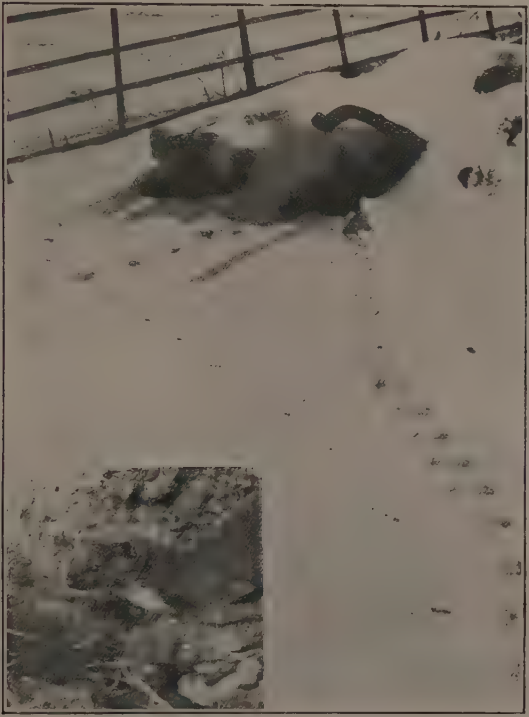


| | |
|---|---|
| Top Row | Nuts gnawed by Meadow Mice |
| Second Row | „ „ „ Dormice |
| Third Row | „ „ „ Field Mice |

I AM going to end the articles in this book by telling you how you may best see for yourselves some of the queer creatures which I have photographed, for the real beasties are far, far more interesting than any photographs of them can be, and they are not so very difficult to see if only you go the right way about it. I think the Winter is as good a season as any to begin in, at any rate with the fur-folk, for there is sure to be plenty of mud, which is a splendid thing for footprints to show up on, and there may be a fall of snow, which will tell you more in a day of the coming and goings of your little brothers, than you could learn without it in a year.

If you put on your thickest boots and go out into the fields and along the hedgerows, after a heavy snowfall, you will find thousands and thousands of footprints. Most of these will be the footprints of birds, but some, you will see at once, belong to four-footed creatures. I am showing you pictures of some of the commonest of these so that you may know them the next time you see them. I have left out Bunny-Rabbit on purpose, because I think you will be able to find out what his curious footprints are like for yourselves, and will remember them better that way.

We will begin with the Weasel's trail in the picture on the opposite page. You will see that there are two different looking trails showing, but they both belong to the same weasel. The reason they look so different is that one set are fresh and the other set are a day old.



THE WEASEL'S TRAIL

There has been a slight thaw, and this has melted the snow so that the oldest trail has fallen in a little. All the trails lead to a woodpile, and I used, after the snow had all gone, to go to that woodpile in the evening and wait for the weasel to come out, and watch him play, which he always did for

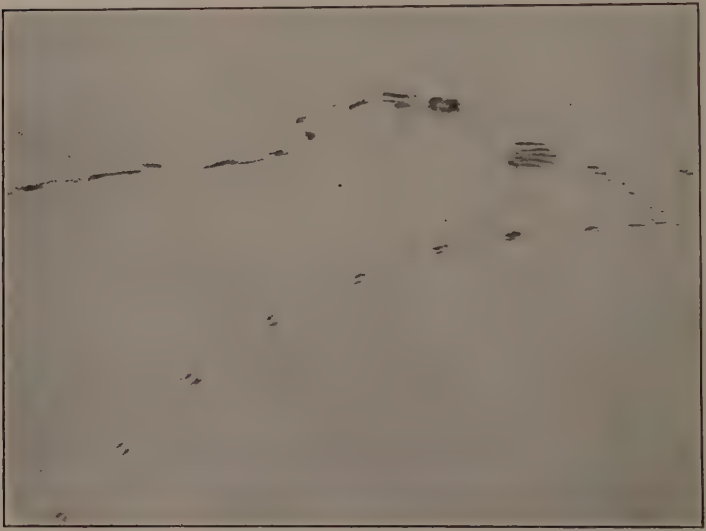
Where the Weasel met the Mice

The mice had made quite a beaten track from one hole to another—this you can see at the top of the picture. The other tracks are the weasel's, except one, which shows the imprint of a mouse-tail

some time before he started hunting. It was quite exciting to follow that little Weasel's trail in the snow. I came to where he had startled a moor-hen and to where he had startled a rook, and to where he had had a splendid game chasing mice. I am showing you a picture of this, and you will notice at once the line down the centre of one of the tracks, which is made by Mousey's tail. Another of the pictures shows you two mouse-tracks running to separate mouse-holes, which I was very glad to know about, and which I don't think I should ever have seen but for the tell-tale snow. A Rat's track is much the same, only larger; and a Stoat's track is the same as a Weasel's, only larger. A Hedgehog does not often come out in the snow, but he does sometimes and leaves a very smudgy track behind him, for he drags his fur along the ground.

Snow shows one much more than mud, but, unless it is of just the right softness the prints in it are apt to be splodgy, and I don't think you ever get so perfect a track in snow as you sometimes do in mud. The pictures of the Vixen's and the Otter's footprints will show you what I mean. A Vixen's footprints are smaller than a Fox's, and a Fox's footprints are smaller than most people think, indeed a

Fox is a smaller animal than most people think. I have a little wire-haired terrier whose footprints are much larger than those of a Vixen. At the same time it is not very easy to distinguish a Fox's track from that of a small dog. Generally a Dog's claws make their mark as well as the pads, and this does not often happen with the Fox; but I think a better way of telling the difference is to

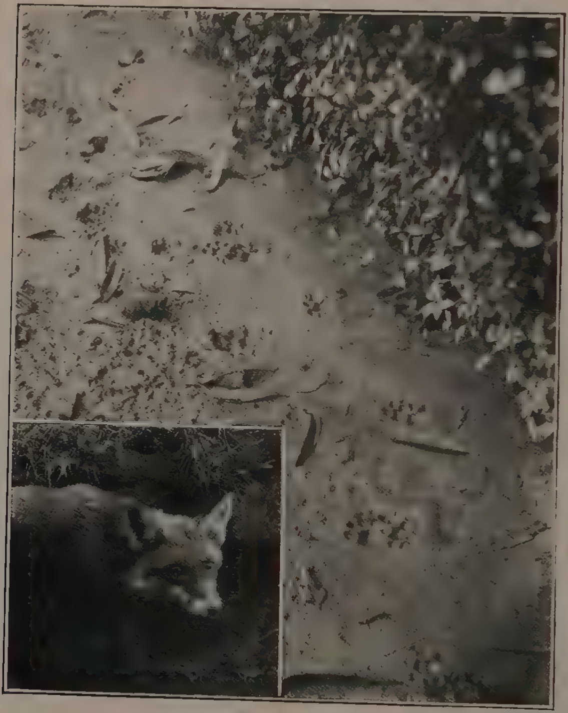


WHERE THE WEASEL MET THE ROOK
You can see where the Rook's wing hit the snow

remember that a Fox's pads are more oval-shaped than a Dog's. You will always, I think, be able to tell an Otter's footprints (some people call them the Otter's seal) by their size, and by their leading to or from the water. Usually the claws can be clearly traced and sometimes the webbing of the feet as well. I have never seen clean-cut Badger's footprints—all I have met with have been very broad and splodgy, more smears than patterns—and I have never seen a Marten's trail at all.

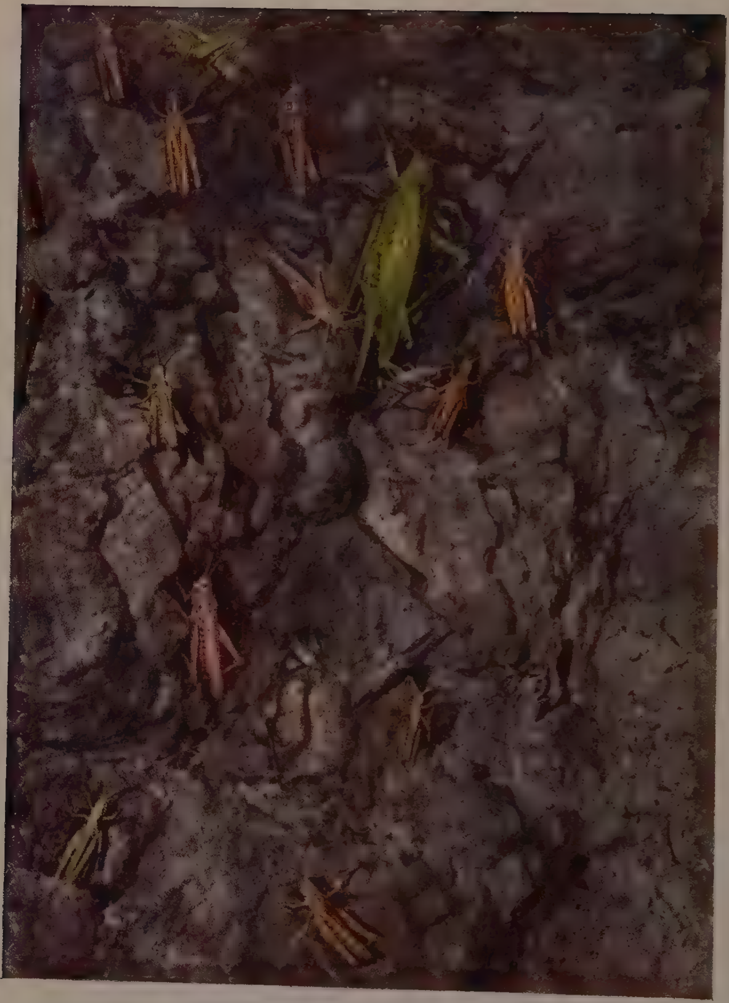
Two Mouse Trails leading to holes in the snow

Footprints tell us a good deal of what is going on about us, and so do "runs" in the grass, and "runs" in the hedges. But, of course, there are other things to be looked for.



The Fox's Footprints

Often one finds the remains of beasties' meals, nuts for instance. Nuts with clean-cut round holes in them have been gnawed by Dormice, nuts with jagged holes by Red Meadow Mice and Wood Mice, nuts split clean in half most likely by Squirrels. Otters leave half-eaten fish about sometimes, and scattered broken eggshells tell you where Stoats have been running the hedgerow. If you notice where you find these things and keep your eyes open, you are sure in time to see what you are looking for.



And the last thing that Winnie remembers was the Great Green Grasshopper's Wife hurrying the little Skipjacks off to bed.

# THE GREAT GREEN GRASSHOPPER'S BAND

## (CHRISTMAS DAY)

"I BEG your pardon!" said the Great Green Grasshopper's wife.

"I think I ought to beg yours," said Winnie politely.

Perhaps, however, you would like me to begin at the very beginning. Very well, then; but you must remember that, for most of it, I can only tell you what Winnie told me. It all seems to have happened between Christmas Eve and Christmas Day. On Christmas Eve, our Cricket, who lives in the kitchen behind the hot-water pipes, had started chirruping as usual, and I had gone into the library, and hunted out an old, old Christmas book and started reading to my small friends a story which began with a cricket singing against a tea-kettle. Then we had had a snapdragon, and then the waits had come round, so everything had been as Christmassy as ever it could be. Just as the waits finished Winnie had got into bed and snuggled herself up. All this I can vouch for myself, for I was there all the time, and I can remember how good the snapdragon was, though I did not eat quite so many raisins as one little girl. However, as she said afterwards, "Even if I did eat thirty, Father, it was quite worth it."

So much for the true part of the tale—now for the magic. Winnie tells me that she never went to sleep at all! The waits and the cricket and the snapdragon and the kettle were all mixed up in her head, and the snapdragon had turned hungry and was trying to snap up the waits, and the kettle was puffing like a little traction engine, and in between the puffs there was a sad little chirrupy sound which she thought must be the cricket. It seemed only kind then that she should slip out of bed, listen on the landing, and creep down to the kitchen to see how the cricket was getting on. She found him sitting on the hearthstone and watching the people in the fire going to church.

Winnie tells me that She never went to sleep at All!

"I can't attend to you now," he said, "I'm just going out."

Winnie had half expected him to speak, but she was a little frightened all the same, and a little curious too.

"Do take me with you," she said. "Where are you going?"

"Where am I going?" said the Cricket in a surprised tone. "Why, it's Christmas Eve!"

"Yes, isn't it lovely!" said Winnie; "and to-morrow there'll be presents. But where are you going?"

"I'm going to be a wait, of course," said the Cricket. "I've been practising all the evening. Listen!"

He ducked his head and lifted up his wings, and a chirrup fluttered out of them and ran all round the dresser. It *was* a chirrup! It wriggled in between the plates and dived into the soup-tureen, and climbed the tea-cup handles, and danced upon the saucers, until the sour deal boards, which had had all the softness scrubbed out of them (and were cross-grained to begin with), felt little thrills of pleasure running down their backs. Then it climbed up the wall and rattled the dish-covers, and at last it died away with a little squeak inside the coffee-pot.

"What do you think of that?" said the Cricket triumphantly.

"It's beautiful," said Winnie; "but where are you going?"

"You'll see presently," said the Cricket; "and I wish you wouldn't chatter so. You nearly made me forget him."

THE CRICKET WAS SITTING ON THE HEARTHSTONE WATCHING THE PEOPLE IN THE FIRE GOING TO CHURCH

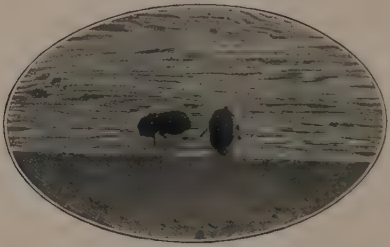
"Forget who?" said Winnie.

"Our drummer," said the Cricket. "Keep still—I heard him a minute ago."

There was a long pause—so long that Winnie almost screamed, for there was nothing but the clock-tick to listen to.

Then something joined the clock-tick—*One-*

*two-three-four, pit-tip, tip-pit, one-two-three-four, pat-tap, tap-pat* (just like soldiers a long way off, as Winnie explained), and presently the drummer himself appeared. He was a very small, squat, round-shouldered beetle, and he came out of a hole in the beam which ran across the ceiling.



THE PAIR OF THEM DROPPED . . . ON TO THE EDGE OF THE KITCHEN TABLE

"What a nuisance it all is!" he yawned. "I was just going off to sleep when I heard you. Is there no one else who can drum?"

"No one who can drum like you," said the Cricket, which is far the best way to answer these questions.

"Very well," said the Beetle, "but my wife must come too," and the pair of them dropped with two little flops on to the edge of the kitchen table. Then the clock chimed in—*one-two-three-four*, right away up to eleven.

"Shall *I* come too?" said a mean little oily voice from under the coal-scuttle. Winnie could just see the Cockroach's whiskers making quivery passes in the air, and she sat down and drew her nightie round her feet as tight as ever she could. She was quite relieved to hear the Cricket's answer.

"Of course not," he said; "you never played anything in your life."

"It's all the same to me," said the Cockroach. "I've given up those silly meadows long ago. Good-night, lunatics!" and he drew his whiskers in and disappeared.

"Was that eleven?" said the House Cricket, taking no notice of his rudeness. "We've no time to lose then. Come along!"

Winnie climbed up on his back as if it were the most natural thing in the world, and the two Beetles climbed up behind her. The drummer Beetle started playing at once—*one-two-three-four, pit-tip, tip-pit; one-two-three-four, pat-tap tap-pat*—and the whole four of them sailed up the chimney. It was not hot (as Winnie explained), for the fire had burnt very low and that was what had beaten the kettle, but it *was* sooty, and she remembers quite well longing to see the clean, white snow on the roof. The Cricket went up crab-wise—a little jump to one side and a little jump to the other; so he took quite a long time to reach the chimney-pot, and when he crawled on to the edge of it the snow was all gone. ("That was the queerest thing of all, Father," said Winnie; there were leaves and flowers and sunshine, and it was just like summer.")

"Now hold tight," said the Cricket, "while I unpack my wings."

This was quite a long business, for the Cricket had to keep moistening his fingers, and Winnie and the Beetles had to keep crawling up and down his back, so as not to be in the way. At last everything was ready, and the Cricket poised himself on the edge of the chimney, spread his wings wide apart, and slid into the air. Winnie was just a little fright-

tened at first, and she put her head down close to the Cricket's neck and shut her eyes and dug her fingers into the chinks of his back; but presently she felt that it was no good being frightened, for they were going quite smoothly, and the Cricket's wing-covers were high up on either side of her, so that she could hardly have fallen off if she had tried to. Soon she felt brave enough to raise her head very carefully and look about her. The kitchen chimney was some way behind, the great elm on her left, and the river close in front. Just before they reached the river the Cricket's wings buzzed like blue-bottles, and she felt they were going upwards. Then came another long, gentle glide, and the Cricket landed on the blackberry hedge at the bottom of the meadow.

"You must all get off here," he said.

Winnie stepped off his back on to a slippery thorn, missed her footing, and fell on the top of the Great Green Grasshopper's wife.

"I beg your pardon!" said the Great Green Grasshopper's wife.

"I think I ought to beg yours," said Winnie politely—which is where the story began some time ago.

"I beg your Pardon," said the Great Green Grasshopper's Wife

The Great Green Grasshopper's wife was more amused than offended.

"Don't mention it," she said. "I suppose you've come to help us, and I'm very glad to see you. It is really most unfortunate, but I couldn't possibly let my husband come—the first Christmas Eve he has missed for years—

but, as I said to him, 'If your leg's frostbitten, you're much better in your hole.' Don't your agree with me?"

"Oh, yes, I think so," said Winnie, who felt she must say something.

"Of course we shall miss him very much," said the Great Green Grasshopper's wife, "but if the Field Cricket isn't too nervous, I dare say we shall pull through. I see you have brought our drummer with you, and here is the Mole Cricket coming up, and the Wood Cricket, and I saw the Bush-cheeps a moment ago. Do you really mean to tell me that you have never met any of them? Then I must introduce you. This is the Mole Cricket. You can't ever mistake him if you have once seen his feet; and this is the Field Cricket—you can't mistake a blackamoor like him either; and this is the Wood Cricket with the check trowsers; and the Bush-cheep always wears a brown tail-coat and a greeny waistcoat. Now you all know each other and we must get to work. What do you play?"

Winnie had been getting a little uneasy all this time, for the Crickets had been unpacking their instruments and making little scrapes just like the band before the pantomime, and she had felt that she would be expected to do something too, and had made up her mind as to what she would say if she were asked.

"I can play a grass-blade a little," she said.

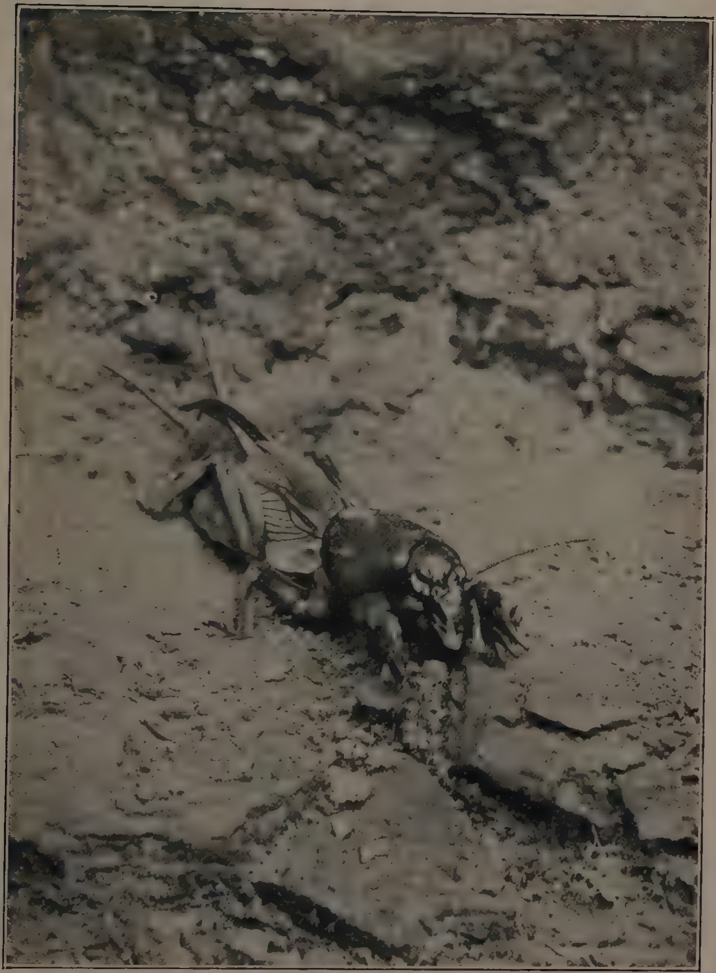
"Well, there's lots of grass about," said the Great Green Grasshopper's wife. "Let's hear you do it."

So Winnie picked a big blade of grass and jammed it tight between the balls of her thumbs and pressed her lips hard against it and began to play. The first note sent the Great Green Grasshopper's wife's hind legs straight up in the air, turned the Mole Cricket and the House Cricket and the Wood Cricket and the Bush-cheeps head-over-heels, and drove the Field Cricket into his hole.

"Easy, easy!" said the Great Green Grasshopper's wife. "You nearly blew my tail off. Can't you play more softly?"

"I'll try," said Winnie.

"Please do," said the Great Green Grass-



THIS IS THE MOLE CRICKET

hopper's wife. "There, I knew what would happen. See what you've done."

THIS IS THE FIELD CRICKET

The Field Cricket had all but disappeared, and there were only two little black legs sticking out of his hole.

"It's no use your trying to play in there," said the Great Green Grasshopper's wife. "Nobody will hear you at all."

"I can't help it," said the Field Cricket; "my nerves are completely upset."

"See what you've done," said the Great Green Grasshopper's wife again. "It will take him twenty minutes to recover."

And she was quite right. For twenty long minutes they had to wait and look at one another, and even at the end of that time the Field Cricket still seemed very shaken.

"I will do my best now," he said at last, "but I simply *must* have my head hidden." He had backed out of his hole a little way and lifted up his wing-covers. Every now and then he chirruped softly.

AND THIS IS THE WOOD CRICKET

"Well, it's better than nothing," said the Great Green Grasshopper's wife, "and you certainly have some excuse this time. Now let's begin." She climbed a little higher in the hedge, tapped sharply with one hind leg, and looked about her.

"Are you all ready?" she said. "Drums?"

"Here!" said the Beetles.

"First violin?"

"Here!" said the Field Cricket.

"Second violin?"

"Here!" said the House Cricket.

"Viola?"

"Here!" said the Wood Cricket.

"'Cello?"

"Here!" said the Mole Cricket.

"Flutes?"

"Here!" said the Bush-cheeps.

"Grass-blade?"

"Here!" said Winnie, screwing her lips up very tight.

"Good!" said the Great Green Grasshopper's wife, and she reared herself up backwards and began to beat time with her hind legs.

"Two bars first," she said. "Now!"

At the third bar they all came in very fairly together, but before they had played half a minute the Great Green Grasshopper's wife stopped short.

("It was really worse than the real waits," Winnie explained. "It was like a million little glass stoppers being squeaked out of bottles—and they didn't seem to mind the time a bit.")

The Great Green Grasshopper's wife looked at Winnie quite severely.

"I asked you to play softly," she said; "you're drowning the whole band."

The First Note sent the Great Green Grasshopper's Wife's Hind Legs straight Up in the Air

"I *can't* play more softly than that," said Winnie.

"Well, there's only one thing to be done then," said the Great Green Grasshopper's wife. "I must hunt up the Skipjacks."

The Skipjacks are the little grasshoppers who live in the fields, and it takes quite a number of them to play a tune that you can hear.

HE HAD BACKED OUT OF HIS HOLE A LITTLE WAY AND LIFTED UP HIS WING-COVERS

"Wait for me here," said the Great Green Grasshopper's wife; "I sha'n't be long!" And she leapt like a jump-jim-crow and landed three yards clear of the hedge.

She really was some time away, but at last she reappeared driving the Skipjacks in front of her.

"It is so troublesome to keep them straight," she explained; "the little idiots! Look at them."

They certainly were a queer flock to manage, for they could only move by jumps, and when they jumped even they themselves had no idea of where they were jumping to. However, by driving them in front of her she managed to keep a few of them together, and at last she got them into their places.

THE GREAT GREEN GRASSHOPPER'S WIFE REARED HERSELF UP BACKWARDS AND BEGAN TO BEAT TIME WITH HER HIND LEGS

"You must fiddle," she said, "as you never fiddled before. The band shall *not* be beaten by a grass-blade. Now altogether—*one*, *two*, *three*, *four!*"

It was really much better that time, and though Winnie could not pick up the tune, everybody else seemed quite pleased with themselves.

"*That's* better!" said the Great Green Grasshopper's wife. "Now again!"

But before the words were out of her mouth the great hall clock chimed in, *Ting—Ting—Ting—Ting——*

"Midnight!" screamed the Great Green Grasshopper's wife. What *will* become of us?"

*Ting—Ting—Ting—Ting——*

"It's fast!" cried Winnie: "I know it's fast. I put it on myself for getting up to-morrow."

"Are you quite sure?" said the Great Green Grasshopper's wife.

"Quite sure," declared Winnie; "it's five minutes fast at least."

"That's a great relief to my mind," said the Great Green Grasshopper's wife; "but, of course, we must stop at once."

Indeed, the Crickets were already packing up their instruments, and the last thing that Winnie remembers was the Great Green Grasshopper's wife hurrying the little Skipjacks oft to bed.

# THE PYGMY SHREW

## (BOXING-DAY)

FEW know him and the careless eye may never see him. He is so small,—that four of him just stop a mouse-hole; so light,—that ten of him just tilt an ounce. Yet, if you search the files, you find him eminent. The Pygmy Shrew in Cornwall! The Pygmy Shrew in Kent!! The Pygmy Shrew in Rutlandshire!!!

Thus fame is garlanded round mystery.

Man's kingdom is brick-built and parchment guarded. The beasties have a nobler heritage. Fence your broad acres as you please, yet they shall quietly share them, paying you naught, and taking what they will. Water and air and land are theirs by prior, nay primeval, right. So shall you bend before their quality, and, for their lineage, you shall respect them.

Something had brushed across the Pygmy's nose. He shook off three days' sleep in three half-seconds. Where was his tail? Sleeping, he swings it up across his face, and gathers all four feet within its shelter. His tail was there, but in its waking-place, behind him. Then something must have moved it. He stretched his neck and sniffed, long wheezy sniffs which ended in a shiver; then he peered down the shaft. He jerked back to avoid an avalanche—a blinding dust-cloud, a rattle of small stones, and, in the midst, two common shrews close locked.

But I go on too fast.

The stump is close against the rookery-fence. It is a stump of quality, a residential stump, a maze of winding roots and secret chambers, wherein field-folk may live without acquaintance. There is a fellow to it in the meadow, another fronts the rabbit mound, and all three hold like tenants.

The woodmouse first, round-eyed and debonair; then the bank-vole, he who is half a mouse, with chestnut coat, broad ear and estimable tail; lastly the ranny-noses; the common shrew—a velvet-coated pepper-tempered gallant; the Pygmy, who is common shrew refined—purple and orange ripple in his fur, and him my Lady Sunshine loves the best of all.

THE WOODMOUSE FIRST, ROUND-EYED AND DEBONAIR

All live together, yet apart, for, under ground, the stumps are intricate. The roots twist right and left and back upon themselves, and, over and beneath them, are the runs. Most are blind alleys, but a few creep on, and strike the upper air. The mice and voles reserve the lowest depths; they must be near the water; moreover they can tunnel where they will. The common shrews live higher, scratch two-inch levels where the rootlets aid them, and trust to their quick ears. The Pygmy takes what stouter beasties leave; and that is how the Pygmy's tail was moved—his sleeping-hole, the mould of some long-fallen stone, abutted on the shaft.

That two shrews should be fighting was quite usual. Shrews fight to keep their limbs in trim; they fight in play; they fight in deadly earnest. A veteran shrew is scarred in every part of him; great scars like thumb-marks, where new growth of fur has failed to draw up level with the old.

Yet even shrews need open ground to fight on. The Pygmy waited till the dust had cleared, then peered into the darkness. The scuffling of them could be plainly heard; and, sharp above it, rose their vicious war-scream. The Pygmy knew what that meant—a bolt for upper air and honest fighting. He crouched back prudently. They rattled past once more in quick succession, the foremost gibbering his distress, the hindmost dumb. But this was dubious measure of their quality, for, where there is bare tunnel-room for one, one needs must be in front, and, then, his only weapon is his voice.

The Pygmy sprang up after them. He is the burrows' jackal, and takes an interest in serious fights. Once on the level ground he paused, made three small casts, then took the right-hand surface-run.

HE TOOK THE RIGHT-HAND SURFACE-RUN

He was quite right; the combatants had passed that way. It was a zigzag run, but unimpeded. A drooping grass-stem tangle formed its roof, and, through long use, its sides were brown and withered, as though some noxious snake had glided through, and poisoned every growing blade it touched. The Pygmy knew it end to end, and knew that, where it broke, close to the elm, there was a moss-grown clearing. So he took matters quietly, and, lingering as the fancy took him, had supped before he reached the fighting-ground. The common shrews were feinting for an opening. He knew them both by sight. One, a brown-coated, thick-set scaramouch was neighbour to him in the stump. The other was a meadow-shrew, of lighter build and

He could See as well as Hear

colour, but longer and full match in weight. The Pygmy rubbed his nose between his paws—a pretty fight was promised.

And others seemed to have got wind of it. The grass-stems flicking to and fro betrayed them. On every side he heard short, fluttery mouse-steps. Above he caught shrill squeaks and whimperings; a bat was busy with the filmy moths. Below the ground seemed shivery—that was the mole. The Pygmy heard and scented him. He crawled discreetly up the trunk, and so could see as well as hear. In the green tangle round were flitting specks—the voles and mice assembling in hot haste. From these his eye passed to the combatants. The grey shrew's ear was torn, and from it hung one drop of blood. This was the lodestone.

Up from a moss-clump shot a woodmouse nose, and, at the back of it, two round black eyes looked murder. The Pygmy caught the chatter-grince of teeth; the bat still threaded needle-notes among the leaves; the leaves themselves were whispering; but clear above these short, crabbed, fretful sounds, he heard the steady rumble of the mole. The thing perplexed him. Could the expectant ring of mice be-deaf? The pair that held the stage were too absorbed to notice anything.

His Rival, feinting, flicked his Tail too Far, and, in a twinkle, it was seized

It was the brown shrew who got home the first. His rival, feinting, flicked his tail too far, and, in a twinkle, it was seized. The grey shrew swung himself upon his back, and kicked with all four paws. But this was waste of strength. The shrewmouse has forked teeth, teeth that will hold a slippery rounded beetle, much more a soft square tail. So with necessity the spur of valour, he twisted round and nipped the brown shrew's foot. Both straightway bit their hardest; the twinge made both give way. They toppled backwards squealing. The grey shrew leant against the trunk and panted; the brown shrew lay half sideways fronting him, and, on all sides, the ring broke into chatterings.

The Grey Shrew leant against the Trunk and panted
The brown shrew lay half sideways fronting him

The Pygmy, trembling with delight, screamed out encouragement, but no one heard *his*

WITH TANGLED TAILS AND ROUNDED STRAINING BODIES, COMMENCED TO SPIN

screams. The bat dived headlong from the leaves, skimmed in between them and shot up once more. The wood-mouse crept two paces forward, then backed abruptly, for they were at grips. Each nipped a loose flap of the other's skin, and, bracing all four feet, tugged at its prize. They tugged until they toppled sideways; then with claws fastened in each other's fur, with tangled tails and rounded straining bodies, commenced to spin.

That is the way of shrewmice, much pother and slight wounds. Their fights are seldom mortal. Rather, they die for want of fighting. Their valiant souls misfit them.

So this hot-blooded, strenuous

pair spun as one living ball across the ring, over and over, twist and twirl, upside and down, faster and faster, until the spin itself released them. Then they sat back from one another and wobbled like spent tops.

The third round started dully. The brown shrew, shaken with exertion, lay on his back the better to refresh himself. The grey shrew, just as weary, crept to an eminence above and eyed him wickedly. The ring was all impatience.

Both soon revived.

The brown shrew twisted corkscrew-wise, and landed arched upon his toe-points. The grey shrew shot beneath him like a whiplash.

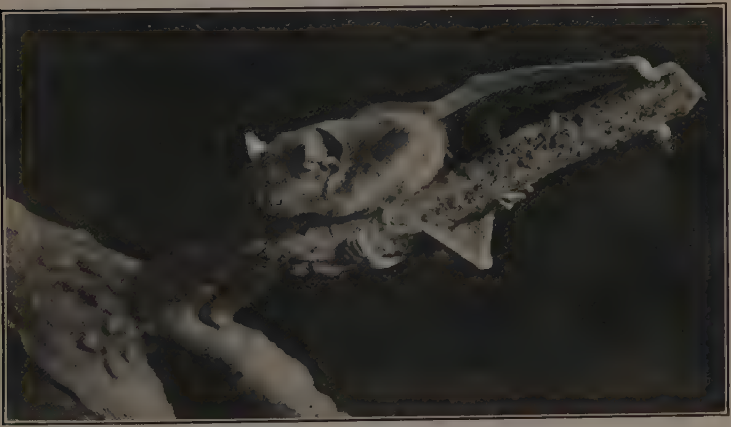
Then They lay Head to Tail, and Tail to Head

Then they lay head to tail, and tail to head.

THE FIELD-VOLES ON THE SKIRTS OF IT COULD ONLY SEE BETWEEN THEIR BETTERS' EARS

The ring drew closer. The field-voles on the skirts of it could only see between their betters' ears. The bat came to a halt and stared. The Pygmy climbed two inches up, and was rewarded. For now both combatants saw red.

They hurled themselves at random, they bit at random, they bucked and somersaulted, they spun entwined in loops and twists, in double-knotted tangles, in sinuous figures of eight. Now one was on his back and now the other—shrewmice reck little which way up they fight. Now they sped screaming up the trunk and all but reached the Pygmy; now they dropped earthward with twin thud, and grazed a red vole's nose. So without



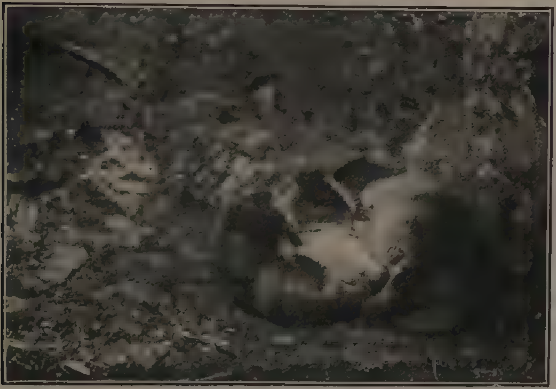
The Bat came to a Halt and Stared

pause or respite. They tore and scratched and gripped and pulled and wrenched and tugged and jumped and squealed until —— it was an earthquake, a rounded dull upheaval, a split and crackle of the moss, a sputter of dry dust, and, in the midst, like some queer fungus growth, the mole's red nose.

The Pygmy Climbed Two Inches Up.

"Flick!" went a woodmouse tail, betokening danger. The amphitheatre emptied in a moment; voles helter-skelter into cover, bat loose into the sky. The Pygmy tumbled earthwards, shot forward, paused, whisked up again, and crept behind a flake of bark.

The two shrews lay amazed upon their backs, and in between them wagged the intruding nose.



Now One was on his Back and now the Other

Slowly it lengthened. Two naked paddle-feet passed on the surface, and, like some clumsy fish that quits its element, the mole plunged into air.

He missed both shrews, who, dashing right and left of him, entangled him in double-minded purpose. Rested the Pygmy, shrunk to a rigid wisp of apprehension, ear-straining, muscle-tautened, behind a flimsy screen of bark.

The mole lurched slowly forward, swaying his noddle-head from side to side, nosing each inch of ground. Blood had enticed him upwards, and blood he meant to taste. It seemed as though short measure must content him—a smear upon a grass stem, a drop upon a pebble. But presently his nose flung up; on either side of it the velvet starred, leaving two loop-holes for his pin-head eyes; he snuffed and peered about him; his brush-tail jerked and quivered; a snarl laid bare his teeth; and then, his instinct mastering circumstance, he charged, with swift alternate strokes, straight at the Pygmy's shelter. Had his eye seen? Had his nose smelt? At least he had a visible allurement—a half inch of the Pygmy's tail. The Pygmy curled it promptly. but, even as it moved, the mole was thundering at the bark. The Pygmy squeezed himself a half inch further, and this half inch meant life. The mole had bored his snout into the breach, and by a forward wriggle brought his teeth to bear.

The Mole Plunged into the Air

The outworks broke and crumbled like a biscuit. His nose attained the citadel itself, but here the assault was checked. Strain as he would he could not get fair tooth-hold, for, working upwards in cramped quarters, he spent his strength in struggling for a purchase.

Only exhaustion stays the hunting mole, and such exhaustion ends in death. This mole was not exhausted yet.

He screwed his nose unceasingly, forced his teeth forward line by line, and ground the bark to powder; snatched out his head for air, and thrust his hand in place of it; snatched back his hand and used his jaws once more. Harder and harder still he worked, closer and closer still he drew, until one claw touched fur.

It was a graze, a skin scrape; the fur shrank out of reach, but the mere contact goaded him to frenzy.

He squirmed and writhed and strained until, by muscle strength alone, he forced his head and shoulders through the gap. His nose now touched his quarry, his hands were squared beneath his chin, palms back, and thus, in earth, he might have tunnelled far. But the stiff shell of bark was obdurate.

The white owl helped him out. She caught him at the bottom of her swoop, and loosed him high up on the elm-tree. Here the white owlets welcomed him.

Before she turned, the Pygmy had reached home.

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